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AUTHOR	Wickline, Virginia B.
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ABSTRACT

Four aspects related to self-esteem and academic achievement were addressed in the review. The first goal was to address methodological considerations of self-esteem measurement. Support for some self-esteem measures, as well as caveats and directions for future research, were indicated. The second goal was to determine whether a relationship between self-esteem and achievement is supported; a small, positive relationship was found across studies. The third aspect was to evaluate two groups of theories in regard to possible American ethnic group differences in the self-esteem/achievement relationship. Traditional self-esteem theories propose no systematic differences in the relationship for various people groups. However, ethnic difference theories such as cultural inversion, cool pose, and stereotype threat-disidentification support that Black Americans may show a weaker relationship than White Americans. A meta-analysis showed support for ethnic difference theories, especially for older Black males. Articles qualitatively show greatest support for cool pose and stereotype threat-disidentification theory. The fourth aspect considered whether direction of causality in the self-esteem/achievement relationship could be inferred. Qualitative review found the most support for a reciprocal effects model. Implications of the current findings are discussed for psychologists and educators alike, and steps for future research and practice are provided for consideration. (Contains 239 references, 11 tables, and 5 figures.) (Author)

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Ethnic Differences in the Self-Esteem/Academic Achievement Relationship: A Meta-Analysis

Virginia B. Wickline

Emory University

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Abstract

Four aspects related to self-esteem and academic achievement were addressed in the review. The first goal was to address methodological considerations of self-esteem measurement. Support for some self-esteem measures, as well as caveats and directions for future research, were indicated. The second goal was to determine whether a relationship between self-esteem and achievement is supported; a small, positive relationship was found across studies. The third aspect was to evaluate two groups of theories in regard to possible American ethnic group differences in the self-esteem/achievement relationship. Traditional self-esteem theories propose no systematic differences in the relationship for various people groups. However, ethnic difference theories such as cultural inversion, cool pose, and stereotype threat-disidentification support that Black Americans may show a weaker relationship than White Americans. A meta-analysis showed support for ethnic difference theories, especially for older Black males. Articles reviewed qualitatively show greatest support for cool pose and stereotype threat-disidentification theory. The fourth aspect considered whether direction of causality in the self-esteem/achievement relationship could be inferred. Qualitative review found the most support for a reciprocal effects model. Implications of the current findings are discussed for psychologists and educators alike, and steps for future research and practice are provided for consideration.

Ethnic Differences in the Self-Esteem/Academic Achievement Relationship: A Meta-Analysis

In February, National Public Radio's Talk of the Nation (2002) hosted a segment simply called "Self-Esteem" in response to Dr. Lauren Slater's incendiary *New York Times* article from the previous day. Dr. Slater suggested that having high self-esteem is not life's biggest priority, which is contrary to many, prominent opinions that have been echoing since the late 1950s. NPR's panel also included Nathaniel Branden, the father of the Self-Esteem Movement, and Roy Baumeister, one of self-esteem's most severe critics in a growing body of researchers.

Why the attention on self-esteem? Perhaps because the concept has infiltrated American culture and some of its strongest institutions, including the government, academia, and school systems. In the PsycINFO database, there are approximately 11,000 sources with self-esteem as a key descriptor in the last 10 years. Within education, the common-sense notion that school achievement influences self-esteem has been long-standing. Conversely, claims have been made that self-esteem impacts school performance. Yet, is an association between the two constructs substantiated by research? Further, does it hold for members of various ethnic groups? This review will address those queries and several more. First, methodological questions regarding self-esteem reliability and validity in measurement will be explored. Second, empirical research will determine if a relationship exists between self-esteem and academic achievement (academic achievement). Third, whether or not ethnicity provides an important source of variance in the nature and/or strength of the relationship will be examined. Variables that may moderate the self-esteem-academic achievement relationship will be addressed, including subject, contextual, and methodological elements. Finally, implications regarding causality will be reviewed from such sources as longitudinal studies, structural equation modeling, path analyses, and intervention studies.

History of Self-Esteem

William James (1890/1950) was among the first to use the term self-esteem, which was then referred to as a self-feeling, an evaluation of one's worth with positive or negative valence. James postulated that self-esteem was equivalent to a person's successes divided by his or her pretensions. In the academic realm, people's self-esteem would be their academic successes divided by how well they think they ought to be doing. Increasing the sum total of one's self-esteem, then, happens either by boosting successes or by diminishing expectations for achievement. James spoke to the presence of various social selves that are combined to form one's overall self-view. Thus, for one person, perhaps peer acceptance is more central to his or her sense of self, while for another, having a lot of money, knowledge, religious piety, or ethnic pride holds sway. Subsequently, one's identity is derived from the selves one regards as most important, and it is suggested that people vary widely in those upon which they will "stake [their] salvation" (p. 310).

Behaviorists in the 1900s succeeded in squelching the emphasis of self-constructs, yet attention to the self and self-esteem returned in the 1920s with Sigmund Freud's focus upon the ego, or "me." Erikson (1968a) described Freud as claiming three sources for self-esteem: narcissism (self-love), infantile omnipotence, and libido gratification (other-love). Subsequent neo-Freudian views of self focused on internal conflict and, sometimes, on esteem (Maslow, 1987). Alfred Adler (1927) noted three potential sources of diminished self-esteem: 1) physical size/strength differences or other sources of biological inferiority, 2) lack of parental and peer support despite inferiority, and 3) overindulgence, leading to inflation of self-worth. Another oft-cited Freudian descendant, Erik Erikson (1963, 1968a), elaborated upon ego identity development, sometimes simply called identity development. Identity derives from internalizing cultural and national ideals, as well as those presented by powerful others when one is young. Erikson suggested that rather than being fixed in childhood, identity or self-perception is shaped throughout the life span. Not until adolescence do children develop a working model of an inner identity, combining who society has forced them to become with their own inner perceptions of who they are and would like to be. Then, peers and figures outside the family become more greatly influential. Baumeister (1986) noted that structure of values and priorities becomes problematic for the first time in adolescence, when "who I really am" is evaluated. Some childhood definitions of self are challenged or left behind. Hence, from Erikson's perspective, self-esteem is derived from ego identity, the belief in one's capability to produce a secure future and to face the social world with a coherent and respectable self-presentation.

In response to both behaviorism and neo-Freudian perspectives, the humanistic movement was born in the 1950s. Abraham Maslow (1987) postulated esteem as a category of needs, including desires for high self-evaluation and for evaluation from others. Maslow asserted that esteem needs became salient after one has met physiological, safety, and belongingness needs. Esteem needs can be divided into categories of competence/achievement and of reputation/prestige. Accomplishment in either need category leads to self-respect, and lack of success results in a sense of worthlessness. Carl Rogers (Butler & Haigh, 1954) emphasized actual self/ideal self discrepancies and self-concept, or the "organized, fluid but consistent, conceptual pattern of the characteristics of the 'I' or the 'me' which are admissible into awareness, together with the values attached to those concepts" (p. 55). Note here the division drawn between cognitions or perceptions of the self and the value attached to these percepts, as this distinction becomes more and more prominent in contemporary times. Still consistent with James' notion is the idea that the self is multiply determined, with more weight put on some aspects of the self than others.

In the late 1970s and early 1980s, the cognitive revolution took hold, and emphasis switched from self-esteem, an affective element, to cognitive components such as self-concept and self-beliefs (Pajares & Schunk, 2001). Albert Bandura championed the importance of self-beliefs and confidence about one's capability for performance, otherwise known as self-efficacy. Notably missing in self-efficacy's definition is the evaluative or affective element that self-esteem implies. Bandura (1997) and Rosenberg and Kaplan (1982) quite clearly distinguished between self-efficacy beliefs (capability or confidence) and both self-concept (descriptions) and self-esteem (self-worth or evaluation).

In the historical context for self-esteem, educational trends regarding self-esteem and self-concept lagged several years behind theory. Post-behaviorism, there was great interest in behavior modification for improving academic achievement. With the humanistic movement of the 1950s and subsequent "self" movement of the 1960s and 1970s, many educators bought into the *self-enhancement* view of academics, seeing children's self-esteem as the primary cause of academic achievement (Pajares & Schunk, 2002). Schools implemented open classrooms, with greater focus on individual progress rather than grades and test scores. They installed self-esteem exercises within daily lessons and supplemented standard curriculum with self-esteem boosting programs. California, driven by State Assemblyman John Vasconcellos, commissioned the Task Force to Promote Self-Esteem and Social Responsibility, proclaiming self-esteem as a vaccine for many social ills, including academic difficulties (Colvin, 1999; Vasconcellos, 1989). However, not everyone was ready to ride the wave – one critic commented that a "rising tide of mediocrity" in schools was being swelled by "a tsunami of artificial self-esteem" (Finn, 1990, p. 40). Most of the educational efforts, despite great intentions, went for naught. Generally, programs designed to raise self-esteem and academic achievement demonstrated only small increases in self-esteem ratings, and they failed to show much impact upon academic achievement scores (e.g., Blume, 1990; Colvin, 1999; Hattie & Marsh, 1996; Scheirer & Kraut, 1979). Based on James' (1890/1950) propositions, this lack of change is not surprising. If self-esteem equals success divided by pretensions, then inflating self-esteem does not necessarily lead to academic success in a causative fashion. Also, to boost self-esteem without increasing achievement is to lower one's pretenses about success. That is, maintaining current achievement levels while elevating self-esteem necessarily lowers one's relative expectations for succeeding – an "I'm OK; maybe I've been expecting too much of myself" approach. Curriculum based on academic achievement as a means of raising self-esteem has fared somewhat better, typically leading to small increases in both constructs (Hattie & Marsh, 1996; Scheirer & Kraut, 1979). Thus, with the cognitive revolution and the failure of self-esteem interventions to show any great, longstanding effects, academic achievement interventions returned to favor in the late 1980s and early 1990s. The zeitgeist became a *skill development* achievement model, whereby self-esteem is conceived as a consequence rather than cause of achievement (Pajares & Schunk, 2001).

Up until this point in self-esteem history, many have assumed that academic achievement holds the same relative value for individuals in their self-system. In fact, the earliest self-esteem and self-concept inventories – first based on White, middle class samples – used academic achievement as a measure of concurrent validity. Many self-esteem/self-concept theories, which sometimes allow for multiple sources of evaluation, often presupposed importance of school achievement for self-views of all individuals raised in American culture (e.g., Coopersmith, 1959, 1967, 1981; Covington, 1992; Erikson, 1968a; Purkey, 1970; Simon & Simon, 1975; Voelkl, 1997). Some thought this especially true for preadolescent males (Coopersmith, 1967; Kifer, 1975). Purkey (1970) went so far as to claim that researchers generally agreed about this idea, even though not everyone saw academic achievement as necessarily central to self-perspectives (e.g., James, 1890/1950, Rosenberg, 1968). Yet for a great many self-esteem theorists, if people differed in the value they placed upon academic success, the variability among individuals was perceived as random. Coopersmith claimed, "There does not…appear to be any reason to suspect a systematic relationship between preferences for any given values and esteem" (p. 42). Erikson's (1963, 1968a) identity development theory proposed that the task of every preadolescent child during the industry vs. inferiority stage of self-development is competent school functioning. Purkey asserted the sameness in the relationship between self-esteem and academic achievement for African

American and Caucasian American students based on one early, unpublished dissertation (Caplin, 1966, cited in Purkey, 1970), though the published records of this research (Caplin, 1969, 1968) did not provide separate correlations for Whites and Blacks. Further, he used this one study to extrapolate to other minorities, suggesting that regardless of color, those who feel badly about themselves fare worse in school. Covington (1992) makes perhaps the clearest statement:

> In our society human value is measured largely in terms of one's ability to achieve competitively. For example, researchers have found that *nothing contributes more to a students' sense of esteem than good grades, nor shatters it so completely as do poor grades* [italics added]…It is achievement, then – and its handmaiden, ability – that dominates as the ultimate value in the minds of many schoolchildren" (p. 16).

For sake of convenience, these theories that tend to reject systematic group differences will be called "traditional" self-esteem theories for the duration of the review.

Not everyone has agreed with traditional self-esteem theorists. In several thorough reviews of the construct, Wylie (1974, 1979) has indicated that empirical evidence does not support the idea that self-esteem and school achievement are strongly associated, rather, the relationship appears to be moderate in nature. Also, ethnicity may very well affect the relationship, an idea voiced by Epps as early as 1975. In the last 15 years, several theories of identity and social processes have developed that suggest *why* ethnic minorities in the United States, especially Blacks, may place less emphasis on academic achievement as a source of self-esteem. These theories will be identified in more detail in the following section.

Ethnic Difference Hypotheses

Cultural Inversion

In reviewing ethnic minority individuals' academic performance in the United States, Ogbu (1990, 1991) identifies two primary types of minorities. The first type is *voluntary minorities*, immigrants who moved to the U.S. of their own will for social advances like better financial opportunities, better education, and/or greater freedom. The category includes Chinese, Koreans, Asian Indians, Central or South American Latinos, and Caribbean individuals. These people often do well at school. The second type is *involuntary minorities*, whose ancestors did not choose to become part of the U.S. and whose integration was accompanied by struggle and oppression. Examples are American Indians, Blacks, Mexican Americans in the Southwest, and native Hawaiians. In general these people did not come with hopes for a better future; living in the U.S. was in some sense a loss rather than a gain of freedom. According to Ogbu, these individuals often have academic difficulties. Sources of difficulty can include low-effort syndrome, whereby they fail to make an effort in academic work, or *cultural inversion*, whereby behaviors, values, and symbols characteristic of those in power, i.e., White Americans, are rejected. These elements are rebuffed because they may be threatening to group identity and to maintenance of distinct, minority culture norms. Academic achievement is said to be one of such privileges that are dismissed, and education is distrusted because of its link to White Americans. Ogbu claims that Black adults, while verbally supporting education, often teach their children to devalue school by not securing jobs or wages commensurate with their education. Children also hear their parents and other adults talk about job frustrations, glass ceilings, unfair standardized tests, discrimination, and various societal barriers. Those who conform to school rules and standard English are sometimes accused of "acting White" (Ogbu, 1990, p. 53).

Cool Pose

Cool pose theory (Majors & Billson, 1992) speaks specifically to Black males' status in American society. The proposition is that Black males learn hard work and continued effort do not secure them the same rewards that White Americans enjoy. In short, outside forces help make sure that the American dream does not apply to them. Black males assume façades of high self-esteem, aloofness, and calmness to reduce anxiety brought on by second-class status. While perhaps first adopted as a defensive reaction, cool pose becomes a way of life, allowing temporary solutions to problems. Yet, it also blocks future progress by limiting their coping responses to a certain style of reacting. It is a source of empowerment and self-control for Black males in a society that has historically removed them from their grasp. Cool pose points to the systematic failure of American educational programs to meet the needs of Black males, even more so than Black females. Majors and Billson cite high dropout rates, failed grades, standardized test performance persistently lower than Whites, and school alienation as symptoms of such failure. Cool pose theory is derived from two sources. The first is Ogbu's (1991) cultural inversion theory, tailored specifically to explain some Black males' behavior as a coping mechanism. The second is Merton's (1968) theory of anomie, where behavior that others define as deviant or unacceptable occurs in a group because they are denied the means to achieving mainstream society's goals, even as they share belief in their value.

While every Black male is not assumed to adopt cool pose as an adaptive strategy, Majors and Billson (1992) claim that it is a relatively frequent phenomenon. While racism and oppression hinders a man's progress, cool pose allows him a form of social competence. It is social regard, not White-sanctioned values such as academic achievement, which contribute significantly to the identity of men and boys who adopt this strategy. To adopt uncool strategies – such as studying, relating to teachers, and enjoying school field trips – is to invite social criticism, forcing a choice between academic success and peer support (Ogbu, 1994). Here, Maslow's (1987) needs hierarchy is consistent: belongingness needs have predominance over esteem and achievement needs. If success at school provokes peer rejection, it may be discounted or devalued. Thus, academic achievement dismissal and cool pose behaviors may have reciprocal influence. If a Black male learns it is not cool to achieve at school because his peers reject it, he may fail to perform or may discount his work. Academic failure or dismissal despite success can then reinforce a self-image of one who is above school because he has aligned himself with his peers' ideas, promoting further disidentification with the academic realm. Thus, academic achievement becomes salient to identity no longer.

Stereotype Threat – Disidentification

When considering minorities, White Americans seem to hold particularly negative opinions toward Blacks and Latinos (Twenge & Crocker, 2001). Steele and Aronson (1995) begin their argument by noting widely known stereotypes that exist in the U.S., for example, girls are not good at math, Jews are stingy, or older people have trouble remembering. Another stereotype, of which Blacks are often aware, is that they have lower intellectual ability (Major, Spencer, Schmader, Wolfe, & Crocker, 1998). With a stereotype looming, people's behaviors create the potential for reinforcing and making it more believable for others, a situation otherwise known as *stereotype threat.* In such instances, people may eventually separate their self-esteem from the behaviors under scrutiny as a protective mechanism. Similar theories positing social devices for individuals' disidentification with academics include the self-evaluation maintenance model (Tesser & Paulhus, 1983) and psychological selectivity (Rosenberg, 1968). The psychological disengagement hypothesis (Major et al., 1998) has been proposed similarly for Blacks as a group.

In contrast to reflected appraisal theories that maintain self views develop from how individuals think others see them (e.g., Cooley, 1902; Mead, 1962/1934), stereotype threat theory proposes that people do not need to believe or internalize stereotypes for them to be influential. Evidence for the validity of stereotype threat has come from numerous experimental manipulations (see Steele, 1997; Aronson, 2002 for reviews). As examples, women who valued math scored worse than men when told a math test produced gender differences, but outcomes were equal with no such introduction. Blacks from an elite university who identified with verbal skills performed worse than Whites when told a verbal test was a measure of intellectual ability, but no differences were seen when the test was claimed as unrelated to ability. A third condition – where participants simply indicated their race before taking the test – primed stereotype threat, producing the same relatively depressed performance for Blacks. Yet, for a different sample of students who did not identify with verbal skills, stereotype threat conditions had no effect; they scored poorly either way (Steele, 1999).

Similarities and Differences

All three theories – cultural inversion, cool pose, and stereotype threat – suggest reasons why school performance may be less strongly tied to self-esteem for Black than White Americans. Steele has indicated that stereotype threat is likely not to be the only source of disidentification. Peer disinterest, deficient schools and teaching, and socioeconomic disadvantage are listed as other possible contributors.

The major distinctions between cultural inversion theory and cool pose theory are two-fold. First, cultural inversion theory assumes all Black children will have the same struggle in identifying with school, whereas cool pose theory is specific to Black males. Second, cultural inversion theory situates responsibility for dismissal of school achievement upon parental influence, whereas cool pose attributes peers as the source. Several important differences can also be noted between stereotype threat theory and the others. First, whereas cool pose theory claims high self-esteem as a pretense, disidentification theories such as Steele's (1997, 1998) do not directly challenge the validity of high self-esteem, tending to see it as legitimate. Instead, self-esteem is thought to be buffered by people rejecting areas of difficulty or with potential negative evaluation, such as academic achievement. Self-esteem is said to be is maintained by focusing instead on peer-related domains without negative within-group evaluation for Blacks, such as sports, body image, or perhaps gangs. Second, cool pose and cultural inversion are not specific about whether academics were ever part of one's identity. Disidentification theory is very specific about a gradual process of academics being *removed* from the realm of self-evaluation. Stigmatized individuals can anticipate negative results in areas where their group typically does or is expected to do poorly. Therefore, they may disidentify even if they personally do well (Major et al., 1998). In stereotype threat theory, contrary to cultural inversion, Blacks do not reject schooling because they do not value it. They may maintain value for education even as they disengage self-esteem and reject outcomes in the academic domain.

Definition of Key Constructs

Self-Esteem

Self-esteem has most widely been used to denote a feeling of worth regarding one's self, whether positive or negative (e.g., Coopersmith, 1967; Rosenberg & Simmons, 1972). Pajares and Schunk (2001) have noted a tendency in the identity literature to use global self-esteem and self-concept interchangeably (e.g., Coopersmith, 1967). Definitions for self-esteem have ranged from those that make a clear distinction between self-esteem as evaluative and self-concept as descriptive (Bandura, 1997) to those who equate them (Byrne, 1986, 1996; Hattie, 1992; Marsh, Smith, Barnes, & Butler, 1983; Shavelson, Hubner, & Stanton, 1976; Smelser, 1989). At the global level, the author concurs that self-esteem and self-concept may not be empirically separable. Indeed, studies that involve purport to measure global self-concept often use self-esteem instruments to sample the construct (Byrne & Shavelson, 1986; Hoge, Smit, & Crist, 1995; Marsh, 1987; Moyer, 1980). Overall, construct validation has supported the idea that one's self-concept is made up of a variety of components. These appear to be hierarchically organized from specific elements to broader categories, e.g., academic self-concept and social self-concept, to global self-concept or self-esteem at the apex (Byrne, 1982, 1984, 1986; Byrne & Shavelson, 1986; Marsh & Hattie, 1996; Shavelson & Bolus, 1982; Shavelson, Hubner, & Stanton, 1976). However, I contend that people place different weights on various elements of the self as primary to their identity. Subsequently, self-esteem/self-concept instruments that tap and sum a few areas of functioning (e.g., school, parents, and peers), without weighting their value to an individual, may relate differentially to outcomes than do global self-esteem measures. In Gestalt terminology, the whole is greater than the sum of the parts. In this case, the whole may not even include all of the parts proposed by a measure. Further, instruments that contain an academic subscale may positively bias the relationship between self-esteem and academic achievement, as academic self-concept shows a moderately strong relationship with achievement in and of itself, around .40 across studies (Byrne, 1982, 1986; Castro, 1998; Jordan, 1981; Hattie & Marsh, 1996; Marsh, 1987; Hoge et al., 1995; Rosenberg, Schooler, Schoenbach, & Rosenberg, 1995; Shavelson & Bolus, 1982; Skaalvik & Hagtvet, 1990; Song & Hattie, 1984). These measures, then, may not really be tapping global self-esteem. Other skeptics of the additive process include Harter (1983) and Wylie (1974). Further support for this decision comes from Twenge and Crocker's (2002) recent meta-analysis, which shows Blacks to score higher on self-esteem measures when an academic subscale is missing.

Subsequently, for this review, *self-esteem will be defined as the evaluative component of the self*, or a judgment or self-worth. Self-concept will be defined as a descriptive approach to the self, which may contain (but will not be limited to) evaluation of worth as one of its components. This differentiation has been supported by other authors (Baumeister, 1993; Campbell & Lavallee, 1993; DuBois, Felner, Brand, Phillips, & Lease, 1996; Gayle & Preiss, 2002; Gray-Little & Hafdahl, 2000; Hattie & Marsh, 1996; Kubiniec, 1970; Rosenberg, 1986; Schierer & Kraut, 1979; Whaley, 1993). Even some that have preferred the term self-concept over self-esteem have assented that *global* self-concept can be measured independently from context specific components, as shown by structural equation modeling (Byrne, 1982, 1984, 1986; Byrne & Shavelson, 1986; Shavelson & Bolus, 1982). Accepting this definition of self-esteem, only instruments that whose items wholly tap context-free or global self-esteem will be included in the primary analysis. This appears to be the most parsimonious approach. However, as noted, many theorists do not make the distinction between global self-esteem and self-esteem assessed by multi-faceted instruments. Accordingly, those tests of self-esteem or self-concept that are composite in nature will be included in meta-analytic techniques as a sensitivity measure. This will help determine if they function similarly in relation to academic achievement measures.

Academic Achievement

Academic achievement will refer to *success in academic tasks* as measured by an external referent such as teacher ratings, self-reported grades, grades from school records, or standardized achievement tests. Self-ratings of performance in relation to peers, e.g., below average, average, above average, will be restricted from the current definition, as they involve others in the evaluation, rather than being an independent, individualized measure of achievement.

Ethnicity

Whereas race tends to denote a degree of biological similarity, ethnicity is often defined by cultural similarities (Reminick, 1987; Yang, 2000). Members of an ethnic group may be of the same race, but they also share some degree of proximity, a common history, and patterns of thinking and values (Reminick, 1987). America is diversifying in terms of ethnicity. The 2000 U.S. Census (El Nasser & Overberg, 2002) showed that now only 65.7% of Americans are Non-Hispanic Whites, with 12.3% Blacks, 9.4% Hispanics, 3.6% Asian, 0.9% American Indians. Across the board, almost 8% of Americans are born in other countries. To rule out potential sources of variance created by country of origin, as well as immigrant and refugee status, the current study of ethnic differences will be limited to two groups: Black Americans and White Americans. To be included, these individuals cannot be described in articles as foreign born.

Goals of the Review

Goal One: Methodological Considerations – Measurement, Reliability, and Validity

A number of researchers have criticized society's value for high self-esteem (Baumeister, Campbell, & Krueger, 2002) and have expressed concern about how the construct is conceptualized and measured. Some have questioned whether public representations of the self match more how people really see themselves (private self) or how they would like to be (ideal self). Baumeister (1982) claims that most people's public self-expressions try to approximate their ideal rather than private self-views. A related criticism is whether responses on self-report instruments, now used heavily to measure self-esteem and self-concept, can be trusted as accurate portrayals. Others have raised psychometric concerns such as reliability and validity of self-esteem measurement in general. Further, though the most widely used instruments are well-normed, it is unclear whether these same reliability and validity estimates apply to individuals whose ethnicity is something other than White American. All of these issues will be addressed in the review.

Goal Two: Ascertaining the Relationship Between Self-Esteem and Academic Achievement

Since self-esteem/self-concept and academic achievement as used in the current review have been defined, a narrative review of research regarding the two variables is in order. In 1970 Purkey claimed that the correlation between self-concept and academic achievement was persistent and significant, which two meta-analyses generally support. The first published study, widely cited, showed an average effect size of $r = .21$ across 128 studies and 1,136 separate effect sizes (Hansford & Hattie, 1982). Studies that specifically measured self-esteem were only slightly more strongly linked, $r = .22$. The most recent study, published in French, has not received much attention in the United States. Muller, Gullung, and Bocci (1988) found an effect of $r = .18$ between self-concept and academic achievement across 38 studies and 836 effect sizes.

Both reviews added a great deal to the self-esteem and achievement literatures, but they were lacking in several ways. First, the prior reviews were atheoretical. Second, while Hansford and Hattie (1982) did look at ethnic differences in the self-concept/academic achievement relationship, race and ethnicity were confounded. "Whites" included White Americans, Canadians, Australians, and British participants; "Blacks" included Black American and Africans. This review will avoid some extraneous variance by limiting the difference analysis to Black and White Americans. Third, in Hansford and Hattie's publication, effect sizes specific to *self-esteem* and achievement across ethnic groups were not derived. Fourth, the last review was published 14 years ago, and substantial data, especially related to minority groups, has been added to the literature since. It warrants knowing if time itself and the increase in minority samples has impacted the overall nature and strength of the relationship.

Perhaps most importantly, Hansford and Hattie (1982) and Muller et al. (1988) appear to differ in their definition of self-esteem than the current author. Hansford and Hattie did not provide a specific definition of self-esteem. Only composite "self-tests," such as the Coopersmith Self-Esteem Index, Piers-Harris Children's Self-Concept Scale, and Tennessee Self-Concept Scale were listed among those included in the study. The current author deems these to be self-concept instruments that contain a self-esteem subscale. Moreover, global measures emphasized currently – such as the Rosenberg Self-Esteem Scale and Harter's Self-Perception Scale for Children, Global Self-Worth Subscale – do not appear to have been included in their analysis. Muller et al. have an element labeled as 'general,' which shows an average effect size of $r = .15$, but it is unclear what type of measures were included.

Thus, this review will provide additional information regarding the self-esteem/academic achievement relationship and will be more specific about theoretical underpinnings. Traditional self-esteem theories would posit a positive association, generally placing academic achievement as primary. Ethnic difference theories would allow that a positive relationship is expected for those in the majority for a given culture. As ethnically mixed samples are often weighted heavily by White participants' results, an overall positive relationship is not inconsistent with ethnic difference theories. However, samples with a considerable percentage of minority members may show smaller correlations.

A substantial portion of the paper will be dedicated to critical narrative review of theoretical expectations. Meta-analysis will be used to determine the overall effect size, but it is by no means a substitute for a sound theoretical framework. It is a means to an end, allowing an aggregate effect size to be compiled across related studies while investigating other factors that can have a bearing on the relationship (Rosenthal, 1995). Its strength exists in supplementing, not supplanting, a narrative review.

Goal Three: Determining if Ethnicity Impacts the Self-Esteem/Academic Achievement Relationship

In 1972, Rosenberg and Simmons detailed the first large-scale study of ethnic differences in the relationship between self-esteem and academic achievement. Their investigation involved over 2,500 Black and White children in grades 3-12. Rather than supporting the then-widespread notion that Black children suffered from lower self-esteem, the opposite was found. Black children appeared to have higher self-esteem, which held even when taking socioeconomic status into account. It is a widely cited "contradiction" that American minority groups such as Blacks generally perform more poorly than Whites in school achievement (Boykin, 1994; Hansford & Hattie, 1982; Hare, 1980; Marsh, 1987; Mickelson, 1990; Neisser, 1986; Ogbu, 1981; Reed, 1988; Rosenberg & Simmons, 1972; Simmons, Brown, Bush, & Blyth, 1978; Winston, Eccles, Senior, & Vida, 1997) while often maintaining higher self-esteem/self-concept (Gray-Little & Hafdahl, 2000; Marsh, 1987; Rosenberg & Simmons, 1972; Simmons et al., 1978; Twenge & Crocker, 2002). All other things equal, these differences would statistically lead to a reduction in strength of the self-esteem/academic achievement relationship for Black individuals. Indeed, researchers have sometimes found little relation between self-esteem and academic achievement for Black students (see Porter & Washington, 1989; van Laar, 2000, for summaries).

However, it does not explain why the correlation is lacking for Blacks but not Whites. A growing number of researchers are suggesting that educational success may not be a source of self-esteem for Black youths by the time they finish high school (e.g., Steele, 1997; Whaley, 1993). In a meta-analytic review of self-concept/academic achievement with race as a moderator, Hansford and Hattie (1982) reported an average effect of $r = .33$ for Anglo individuals, $r = .19$ for Blacks, and $r = .23$ for Chicanos. When racial groups were "mixed," the effect was much smaller, $r = .13$. This suggests the possibility that ethnic/racial group differences are being masked by lumping together persons of different heritages.

A lack of difference in the relationship for Black versus White American samples would support traditional self-esteem theories, which suggest no reason for systematic differences. A stronger relationship for Whites than Blacks, however, would be in accordance either with stereotype threat theory, suggesting that Blacks could be disidentifying with school, or with cultural inversion theory, indicating that Blacks might be rejecting academics as a White cultural value. Extrapolation from cool pose theory also suggests differences in favor of Whites as long as males are involved. Several of these theories, however, are more specific about ethnic differences in interaction with other variables. This will be addressed in the critical narrative review.

Goal Four: Investigating Causal Implications

Even if an association between self-esteem and academic achievement holds, the logical fallacy that correlation equals causation must be avoided. A variety of causal models for self-esteem/academic achievement have been proposed. Educational achievement models have been built both on the self-enhancement view, placing self-esteem as causal, and the skill-development model, which posits that academic achievement leads to self-esteem. However, other possibilities exist: the two variables could have reciprocal influence, there could be intervening variables, a third variable could lead to both, and the relationship could be spurious.

Summary of Goals

The primary purposes of the review are to examine the self-esteem/academic achievement relationship and to determine if ethnicity moderates the effect. Two additional topics – methodological considerations and causal implications – will be tackled as well. This review improves upon previous ones by incorporating interactions between variables; by making theoretically-based predictions; by critical analysis of self-esteem/self-concept constructs; and by suggesting the relevance of causality implications to educational practices. Now that the purposes have been outlined, what follows are the method and results of qualitative and quantitative review, discussion of the findings, and implications for future research and practice.

Method

Search Strategy

A variety of strategies were utilized to secure studies. Computerized databases were accessed, including PsycINFO, ERIC, Sociological Abstracts, and MEDLINE. Keywords included "self-esteem," "self-concept," "self-perception," "perception of self," "achievement," "school achievement," "academic," "academic achievement," "school," "GPA," "White," "Black," "Caucasian," "African American," "self-esteem and review," "self-esteem and meta-analysis," and "self-esteem and reply." Reference sections from articles were scanned. Then, journals with several references to articles regarding self-esteem and academic achievement were manually searched from 2000-2002 for additional sources. Forty authors of published works were contacted for additional sources, unpublished data, and missing statistical information of relevance, e.g., ethnicity, socioeconomic status, and effect sizes by ethnic group. Lastly, one national database of the National Center for Educational Statistics (NCES; 2002) was accessed, and the pertinent variables were statistically analyzed. The review includes both published and unpublished sources, such as journal articles, book chapters, dissertations and theses, in-press papers, national databases, and re-analysis of published data separated by ethnic group, provided by the studies' author(s).

Goal One: Methodological Considerations – Measurement, Reliability, and Validity

Issues related to measurement, reliability, and validity of self-esteem were addressed via critical narrative review. The strengths and weaknesses of measures used in the current study were explored.

Goal Two: Ascertaining the Relationship between self-esteem and academic achievement

Theoretical positions regarding the relationship between self-esteem and academic achievement were ascertained before establishing the specific methods for its investigation. Potential moderating variables were deduced from the literature base for self-esteem/academic achievement. Only then was it determined that sufficient studies existed to perform a meta-analysis in addition to the qualitative review.

Studies included in the meta-analysis had to meet the following criteria. First, the study had to contain a global, *not context specific,* self-esteem instrument as well as a measure of academic achievement. An a priori decision was made to separate studies with global self-esteem measures from those that claimed to be self-esteem measures but were actually multi-faceted in nature, containing an global self-esteem as a subscale, or those that specifically called themselves self-concept, entailing descriptive statements or adjective checklists. Thus, many studies employing widely-used instruments for self-esteem, e.g., Coopersmith's Self-Esteem Inventory, Piers-Harris Self-Concept Scale, were dismissed from the primary review. Studies using domain-specific self-esteem, e.g., academic self-esteem, were also eliminated. Second, an effect size for the self-esteem/academic achievement relationship either had to be present or had to be calculable from the data. Primarily this effect was conveyed as a Pearson's product moment (zero-order) correlation, or r, but there were times r was not reported. In this case, some relevant group comparisons could be converted to r from means and standard deviations or one degree-of-freedom F- or t-tests (see Appendix A for statistical formulas and information). The authors that provided none of these things were contacted if they simply claimed the effect was significant/non-significant without reporting it or if they had the relevant self-esteem/academic achievement variables in the study but did not correlate them. Third, studies could not be reporting partial self-esteem/academic achievement correlations. However, several that did are discussed in the qualitative review. Fourth, studies could not be comprised of exceptional populations, such as mentally retarded or learning disabled children. Fifth, studies had to involve at least 15 participants. If studies reported effect sizes for mutually exclusive subgroups, e.g., Whites and Blacks, both effects were included, as these results would be largely independent. When studies reported several measures of a variable, such as grades and standardized tests, only the first reported effect size was included. If several articles were based on the same dataset, only one effect size for a given sample was used.

Samples. A total of 41 studies involving self-esteem and academic achievement were selected for meta-analytic review, with 80 separate effect sizes and 48,038 participants. Sample sizes varied from 15 to 13,373 (median = 204). Mean age for samples ranged from 8 yrs to 36.7 yrs (mean = 15.3 years). Twenty-nine of the studies were published. See Table 1 for more details.

For the self-concept sensitivity check, 50 studies were secured, with 14,026 participants and 94 separate effect sizes. Sample sizes varied from 22 to 1,422 (median = 81). Participants' mean age ranged from 4 years to 25.8 years (mean = 12.9). Ninety percent of these studies were published. For more information, please see Appendix B, Table 1.

Goal Three: Determining if Ethnicity Impacts the self-esteem-academic achievement Relationship

Ethnicity was defined categorically, with 1 = Blacks, 2 = Whites, and 3 = "mixed" American samples. Ethnicity as a continuous variable was intended, but many studies failed to report percentages of Black individuals. Further, most mixed samples included persons of other ethnicities, e.g., Latino(a), Asian American, etc. Thus, using either percent White or percent Black would not have provided a clear picture of the intended contrast between the two groups. Other minorities, while important, are not included in the ethnicity analysis (except in the mixed sample), as there were not enough independent effect sizes to make reasonable, meaningful conclusions about these groups. Also, with the few effect sizes secured for Latino(a) and Asian Americans, confounds existed with immigration status, creating another potential source of systematic variance which did not appear to be a factor for Blacks or Whites.

A total of 18 independent, Black American samples ($N = 6,762$) were secured from 13 studies, while 14 independent, White American samples ($N = 16,897$) were drawn from nine studies. If ethnicity was not recorded, samples were coded as mixed. For the narrative review, two studies included interactions between ethnicity and other variables. These other variables will now be described.

Examination of Moderator Variables. I have defined self-esteem strictly as a judgment of global self-worth, but because not many authors have been this parsimonious, it is necessary that many of the studies here reviewed will be addressing the larger construct of composite self-concept, which contains global self-esteem. Despite proposed differences between global self-esteem and composite self-concept measures, they are thought to function similarly in relation to academic achievement. Appendix A provides details regarding statistical analysis of moderating variables. What follows is a rationale for inclusion of moderators with predictions (where appropriate) by the theories under review. Coding strategies for moderators are also provided.

Gender. The literature regarding whether males or females report higher self-esteem/self-concept is conflicting. Three recent meta-analyses of gender differences have shown opposite effects in favor of males (Kling, Hyde, Showers, & Buswell, 1999; Major, Barr, Zubek, & Babey, 1999) and in favor of females (Sahlstein & Allen, 2002). Whether gender differences exist in the self-esteem(self-concept)/academic achievement relationship is also unclear. For example, using the Coopermith Self-Esteem Index (CSEI), Short Form, Robison-Awana, Kehle, and Jenson (1986) determined that seventh grade boys indicated slightly higher self-concepts than girls across three levels of achievement. Both groups showed self-concept increases across achievement level, but the slope was steeper for girls than boys. Rubin (1978), using 9-, 12-, and 15-year-olds, found that at age nine, girls' but not boys' CSEI scores were significantly related to their standardized tests. These differences disappeared for the older groups, where all self-concept scores were significantly related to achievement. Primavera, Simon, and Primavera (1974), also utilizing the CSEI and standardized test scores, found significant relationships between self-concept/academic achievement for fifth and sixth grade girls but not boys. In contrast, Skaalvik (1983) tested 348 Norwegian second, third, fourth, sixth, and eighth grade children. He found significant relationships for the three oldest groups of boys but not girls (r = .22, .43, .26, respectively), while also finding significant relationships for girls but not boys in younger two grades (r = .46 and .39, respectively). Thus, the results are not consistent across age groups. In a review, West, Fish, and Stevens (1980) indicated almost equal numbers of studies finding stronger relationships for girls and stronger relationships for boys.

None of the theories under review have proposed systematic differences between males and females across age groups. The two prior meta-analyses found no significant differences in the relationship for males and females (Hansford & Hattie, 1982; Muller et al., 1988). In the current review, gender included three categories: males, females, and mixed gender samples.

Age/grade. Erikson's (1968a, 1963) theory gives reason to believe that achievement may be of some importance for all children up until adolescence, when priorities are challenged (Baumeister, 1986). At the adolescent stage of identity versus role confusion, defining one's ultimate identity is the prime task (Erikson, 1963), and peer relationships can become more of a priority. During young adulthood, the intimacy versus isolation stage, love relationships may take predominance. In contrast to Erikson, Twenge and Campbell (2001) suggest that school becomes more, not less, important in junior high.

While Erikson's theory first places a drop in the relationship at junior high, Twenge and Campbell maintain that grading and competency become salient during adolescence, suggesting intensification. Both, however, suggest the trajectory for the self-esteem/academic achievement relationship could change at different developmental levels: elementary to middle school, middle to high school, or high school to college.

Rubin (1978) showed the relation between self-concept and academic achievement in reading to increase across ages 9 ($r = .21$), 12 ($r = .31$), and 15 ($r = .41$). Hansford and Hattie (1982) recorded an average effect of .12 in preschool, .20 in primary (elementary) school, .27 in secondary (high) school, and .14 at college/university. They claimed restricted range in college samples, i.e., self-selection for academic endeavors, as the reason for the drop. However, if these are students who have chosen to continue education, could we not also expect them to identify more strongly with academics as a source of self-esteem than the general population? The drop, then, may not be best explained by range restriction but by developmental influences such as those proposed above by Erikson (1963).

In the current review, age/grade was investigated as both a continuous and categorical variable. In most cases, grade was provided by the authors. Individuals were grouped into four categories: elementary school, middle/junior high, high school, and college and beyond. Studies that used widely divergent age groups without separate report of effect sizes by grade, e.g., second and eighth graders combined, were not included at this step of analysis. Further, to see more subtle differences in the self-esteem/academic achievement relationship, age was included as a continuous moderator. Where mean age was not provided, it was derived using seven years for first grade and adding one year for each subsequent grade. Samples with several, continuous grades used a median score as an age estimate. For example, for grades 9-12, corresponding ages were 15-18, with a median of 16.5. When the number of students in each grade was reported, the approximate age was weighted by sample size. For example, 25 first graders and 35 second graders would be [25(7) + 35(8)] / 60.

Developmental changes would not be inconsistent with either traditional self-esteem or ethnic difference theories. What would be important is an interaction between age and ethnicity, such that one group increasingly removes academic achievement from self-esteem while the other does not, which is discussed below.

Socioeconomic status (SES). While some researchers claim that lower SES negatively impacts esteem (Porter & Washington, 1989), others find the self-esteem of disadvantaged children to be higher (Soares & Soares, 1969). In a meta-analysis, Twenge and Campbell (2002) showed small but significant differences in self-esteem across SES levels, $d = .15$. Hare (1980) found that ethnic differences in adolescents' self-esteem disappeared once SES was controlled, but lower SES children had lower esteem. Regarding self-esteem/academic achievement, Coopersmith (1959) still found a significant correlation between the two variables when controlling for SES. Another meta-analysis reported effects of $r = .13$ for low, $r = .25$ for middle, and $r = .22$ for high SES (Hansford & Hattie, 1982). Overall, the claim that it is unclear how SES impacts academic achievement (West & Fish, 1973), still stands today. However, there is sufficient evidence that SES may affect either self-esteem or academic achievement, so it warrants consideration.

The potential impact of SES, while not accounted for in any of the theories under review, is not inconsistent with their positions. All would likely allow SES as a potential confound. Steele (1998) has mentioned specifically how it may be another social factor that affects disidentification. Ethnic minority individuals tend to have lower SES than White Americans, and many a study has failed to take this into account, matching middle-class White children to low-income minority children. In the current review, four levels of SES were determined: low, low middle, middle, and upper middle. Upper class samples were intended to be included but were not found in the literature. An additional category of 'mixed' was coded but not analyzed. There was great variability in how SES was measured, and a sizeable number of studies (especially earlier ones) did not even report it. Several others used nationally representative samples.

Age/grade x gender interaction. In 1971, Bardwick claimed that academic achievement was a way for young girls to gain others' approval, thereby relating to their self-esteem through relationships. In her study, high achieving girls also sought the most attention, which was not true for boys. She said a relative change happens in adolescence, whereby boys begin to have stronger relationships between self-esteem and academic achievement because school success may threaten girls' social standing. Thus, the interaction between gender and grade was tested.

Age/grade x ethnicity interaction. Unfortunately, the literature has not sampled these variables in concert very well, yet theoretical arguments regarding an interaction can be elucidated. Traditional self-esteem theories again offer no reason to suggest systematic differences across groups. Extrapolation from cultural inversion theory allows one to hypothesize that children may be less aware of cultural expectations than adolescents. Therefore, Black and White children may be similar in degree of school identification, marked by the self-esteem/academic achievement relationship. A change may not occur until adolescence or early adulthood, when a broader understanding of culture takes place and individual identity becomes crystallized. Cool pose theory does not suggest a specific age when Black males tend to adopt the cool defense, but it is logical to assume that children would be less likely to do so than adolescents, thus lending support to a difference between school children and all other ages. Stereotype threat theory directly suggests a gradual disassociation from school for Blacks as instances of stereotype threat compound. Steele (1997) asserts that adolescence is the time when stereotype threat becomes salient and disidentification appears. Therefore, stereotype threat theory makes clear what the other ethnic difference theories appear to support: differences between White and Black students should begin around or after middle school. Further, extrapolation from stereotype threat theory indicates that the gap between White and Black students should get progressively worse.

Ethnicity x gender interaction. Similar to the ethnicity x grade interaction, researchers have often failed to take both ethnicity and gender into account. Once more, traditional self-esteem theories offer no reason to suggest systematic differences. Neither does cultural inversion theory, as Black boys and girls are assumed to encounter prejudice and social difficulties in the same fashion. The other two theories give reason to expect differences between Black males and other groups. Stereotype threat theory proposes that the possibility of confirming widespread, negative stereotypes in others' eyes is what drives disidentification. In relation to Blacks, this was originally based on the stereotype that they are bad at school. However, recent research with a multi-ethnic sample of junior high students has shown that the academic disengagement stereotype holds specifically for minority (Black and Latino) males but not females (Hudley & Graham, 2001). Finally, the cool pose model has been clear in purporting that prejudice and oppression are more keenly felt by Black males than females, which would indicate their greater disidentification.

Year of data collection. Hansford and Hattie (1982) reported a significant negative correlation between year of publication and the self-concept/academic achievement effect, $r = -.14$, indicating the correlation is decreasing with time. They remarked that the effect, while significant, was not likely to be meaningful. Twenge and Campbell (2001) would disagree. Their cross-temporal meta-analysis, looking at the self-esteem of college students, showed an increase from 1968 to 1994. If self-esteem scores increase while academic achievement stays relatively stable, this could result in a smaller relationship across time. However, academic achievement does not seem to be stable. Grade point averages increased (Zirkel, 1995) while SAT scores declined steadily from 1964 to mid-1980s (Smith, 1997;

Twenge & Campbell, 2001). In any case, it is reasonable to expect that the self-esteem/academic achievement relation could vary over time. Twenge (personal communication, June 25, 2002) suggested using data collection year rather than publication date as a more accurate estimate of cultural trends, using publication year minus two years as a proxy when the collection date is not given. Support for following her recommendation comes from Muller et al. (1988), whose meta-analysis of self-concept/academic achievement showed the effect to decrease by year of study, $\beta = -.31$, but not by publication, $\beta = .18$.

Self-esteem measure. Hansford and Hattie (1982) found variation in self-concept measures, with effects ranging from $r = .05$ to .43. Since self-esteem is defined here as part of self-concept, similar outcomes may be expected in the self-esteem/academic achievement relationship. Comparing self-esteem measures is thought a proxy for study quality, as widely used instruments are likely to have better reliability and validity than idiosyncratic measures. Five types of self-esteem measure were compared: the Rosenberg Self-Esteem Scale, the Self-Esteem Questionnaire, the Self-Perception Profile, teacher ratings, and 'other.'

Academic achievement measure. Several authors have suggested that grades may influence a child's self-esteem more than standardized tests because they are more salient and frequent performance indicators (Buller-Taylor, 1998; Maruyama, Rubin, & Kingsbury, 1981; Marx & Winne, 1980). However, some also claim tests to be a better measure of academic achievement because they are less context-dependent (Marx & Winne, 1980) or because grading standards differ between schools (Wylie, 1979). In relation to meta-analyses of self-concept, the findings for different achievement measures are equivocal. Hansford and Hattie (1982) reported effects of $r = .18$ for self-esteem and reading scores, .21 for composite standardized tests, .34 for teacher ratings, and .34 for grades. In contrast, Muller et al. (1988) found no significant differences between aptitude tests and performance in school subjects. The current study used four categories of academic achievement: self-reported grades, grades from school records, teacher achievement ratings, and standardized tests.

Publication status. The file-drawer problem (Rosenthal, 1995) is a phenomenon that addresses a tendency for published articles to report findings that may be overestimates of the true effect size. The analogy is thus: Studies with a large effect are published while those without are stuck in the file drawer. Meta-analyses tend to suffer from this problem if they exclude unpublished literature. In a review of the self-concept/academic achievement relationship, Hansford and Hattie (1982) showed equivalent journal and theses results, $r = .21$. However, the potential file-drawer problem in the self-esteem/academic achievement relationship warrants investigation, as self-esteem is defined apart from self-concept here. A larger effect size for published versus unpublished studies (e.g., in progress, dissertations) indicates a vulnerability to this problem. Therefore, two techniques were used in the current review to investigate the file-drawer possibility. First, unpublished statistics were actively pursued and are largely represented in the analysis. Publication was then entered as a moderator. Second, the fail-safe N was calculated to detect how many null findings would be needed to reduce the effect to non-significant. The greater the fail-safe N, the less likely the file-drawer problem is having an impact.

Goal Four: Investigating Causal Implications

Techniques that have tried to establish causal inferences were reviewed. This included longitudinal studies, structural equation modeling, path analyses, and intervention studies.

Results

Goal One: Methodological Considerations – Measurement, Reliability, and Validity

Types of measurement. Bandura (1997) did not believe interpreting self-esteem globally was justified, conceptually or empirically. While this is quite a strong statement, most theorists are not ready to throw out the concept of global self-esteem altogether. Rather, most arguments center on how global self-esteem or self-concept is best assessed. Self-esteem or self-concept measurement has taken a variety of forms, to include Q-sorts, projective tests, semantic differential instruments, adjective checklists, and questionnaires (Wylie, 1961). During the last 30 years of self-esteem research, the self-report questionnaire has become the most frequently used form of testing. As such, it will be the type of measurement critiqued here. Wylie (1961, 1974, 1979) has written several, very comprehensive reviews of the self-concept literature that have addressed other types of measurement, which are beyond the scope of the current paper. In general, she reports that projective, Q-sort techniques, and semantic differential techniques have been inadequate in showing sufficient reliability and validity. Self-report questionnaires tend to have the same criticism. Wylie (1961) notes that about 80% of self-esteem/self-concept instruments are idiosyncratic and provide very little evidence of sound instrumentality. Several widely used measures, like the Tennessee Self-Concept Scale and the Coopersmith Self-Esteem Inventory, she rejects for the same reason (Wylie, 1974, 1989). However, some other widely used instruments have better outcomes, showing "general methodological promise" (Wylie, 1989, p. 4). Three of these, upon which the meta-analysis is heavily based, are the Rosenberg Self-Esteem Scale (RSE), the Self-Worth subscale of the Self-Perception Profile (SPP), and the General Self subscale of the Self Description Questionnaire, II and III (SDQ-II, SDQ-III). Another instrument published since Wylie's review, the Self-Esteem Questionnaire (SEQ) also has strong evidence of reliability and validity. The focus of the critique will be upon these four instruments.

Reliability. For internal consistency estimates, Cronbach's $\alpha = .80$ is suggested as a minimal value (Hammill, Brown, & Bryant, 1992). A summary of reliability coefficients found in reviews and independent articles can be seen in Table 2. Most α levels for White samples show acceptable reliability. Estimates for minorities were hard to find; however, effects are lowest for several Black samples. No known author has provided inter-item correlations or item-total correlations for self-esteem questions.

Since the NELS (2002) raw data were available, these were calculated for Blacks and Whites, with coefficients derived by ethnicity and gender (see Table 3). Inter-item and item-total correlations as well as reliability were lower for Blacks than Whites.

Validity (All information is from Wylie, 1974, 1989, unless otherwise indicated). We will begin validity exploration with the RSE. A Guttman coefficient of reproducibility of .92 suggests unidimensionality. Indeed, factor analyses for the RSE generally show one-factor solutions, though some have shown two (positively and negatively valenced items). No formal factor exploration has been done across ethnic groups. Strengths of the RSE include avoidance of item ambiguity, ipsative scoring, forced-choice format, and discrepancy scores. It uses half positive/half negative wording, which avoids acquiescent responding. The RSE assumes to avoid social desirability if respondents are given anonymity or are motivated to cooperate. Its convergent validity with other self-esteem measures is good, from .56 to .83. The RSE has been discriminated from specific self-concept measures, such as academic self-concept, and it has correlated .56 with an interviewer's self-esteem rating. It is only moderately correlated (~.40) with self-confidence, popularity, physical appearance, and physical and school ability, supporting that it measures general rather than specific self-esteem. It is positively related to locus of control (~.22) and negatively related to measures of psychosomatic symptoms, loneliness, depression, and anxiety (~-.45). Wylie's main criticism is that it needs more validity tests with things other than self-report measures.

The SDQ-II and SDQ-III are based on Shavelson et al.'s (1976) hierarchical model of self-concept. Items were derived from factor analysis and make up 11 subscales that intercorrelate from -.03 to .39. It has four academic subscales, eight nonacademic subscales, and a general self subscale (derived from the RSE). Items are both negative and positive, avoiding acquiescent responding. The SDQ-II does not have convergent validity coefficients or multitrait-multimethod analyses, but the SDQ-III does. For the SDQ-III, correlations are higher among academic subscales and among nonacademic subscales than between these two areas. Its strengths include avoiding forced-choice, dichotomous scoring, item ambiguity, item overlap between scales, ipsative scoring, and discrepancy scores. There are high correlations (.79) between the general self subscale and the RSE. Three multitrait-multimethod matrices support the convergent and discriminant validity of SDQ-III scales.

The SEQ (DuBois et al., 1996) has six subscales: Peers, school, family, body image, sports, and global self-esteem. Its base is a developmental-ecological framework, and it includes only evaluative items in order to increase content validity. Ten of 42 items are reverse scored to avoid acquiescence. Factor analysis including global self-esteem supported the proposed factor structure, which a structural model also supported: Global self-esteem is set at the apex, with the other five lower-order factors beneath, explaining about 86% of the variance in self-esteem. DuBois et al. tested the model fit for ethnic groups and found no differences. Interview and parent-report forms can be administered. Using these in multitrait-multimethod analysis, the pattern of results gave evidence of convergent and discriminant validity. For the SEQ, self-esteem is significantly related to perceived social support, daily stressors, and major life events.

The SPP has six scales: Global self-worth and five scales tapping school, social, athletic, behavior conduct, and physical appearance. Its strength is a theoretical foundation based on James' ideas (1890/1950). Its main weakness appears to be that self-worth was not tested as an independent factor in three factor analyses (Keith & Bracken, 1996), which do support the five other proposed domains. Interscale correlations range from .14 to .45, supporting independence of the factors, which correlate from .41 to .52 with the self-worth subscale. The SPP avoids item ambiguity, forced-choice format, ipsative scoring, dichotomous scoring, item overlap, and acquiescent responding. While the measure asserts that its choice format avoids social desirability, Wylie (1989) says this is questionable. No multitrait-multimethod matrices are yet available. Correlations of .50-.65 exist between self-worth and perceived parental and peer regard.

Hattie (1992) said there were too few validity studies for self-esteem, which is still true. This is an area where self-esteem theory needs to continue to be tested in the future.

Response style. The argument has been made that on Likert scales, Blacks more often use extreme responses than Whites. Bachman and O'Malley (1984) looked at four nationally representative samples using the RSE or its derivatives and converted five-point Likert ratings to a three-point scale. Standard scoring showed Blacks to have higher self-esteem, while collapsed scoring did not. Moreover, Gray-Little & Hafdahl (2000) showed the RSE had larger Black-White differences than three aggregate measures of self-concept, nearly one quarter of a standard deviation.

Despite their findings, Bachman and O'Malley (1984) also note that "different scoring methods lead to different patterns of results, but we are not prepared to argue that one is fundamentally more valid than the other" (p. 637). They suggest collapsed scoring reduces item variance, interitem correlations, and index reliability – which can be less sensitive to true differences. Some support against extreme responding can be found in Kalanek's (1997) investigation of multiple types of self-esteem. While Blacks had higher global levels of self-esteem than Whites, Latinos, and Asians, they were not different in all self-esteem subscales. Particularly, no differences were found between Blacks and either Whites or Latinos in school self-esteem.

Social desirability. Baumeister & Tice (1986) make the argument that the self publicly presented may differ from one's private self (self-concept). Few studies have investigated the degree to which people are presenting themselves positively in terms of ethnic differences, but there are a few. In Simmons et al.'s (1978) study of 798 sixth and seventh graders, Blacks and females were more likely to give socially desirable answers. However, when this variance was controlled, Blacks still had higher self-esteem. Verkuyten (1994) details two studies from the Netherlands with similar results: minorities had greater social desirability, but when controlled, their findings for greater minority self-esteem were primarily unchanged. In one of few studies that specifically measured social desirability with the Crowne-Marlowe Social Desirability Scale, Schemeck (1998) noted a small correlation with self-esteem of $r = .23$. Specific to Rosenberg's scale, Twenge and Campbell (2001) claimed its relation with social desirability to be increasing with time as college students increasingly see high self-esteem as a good thing to have. Overall, the research suggests that socially desirable responding is likely to have some impact upon self-esteem report and should be taken into account. However, studies that did so showed no noticeable difference in outcomes, thereby indicating that the impact of socially desirability is small.

Summary. The evidence suggests that self-esteem holds up as a construct and that self-report can be a valid form of measurement. Even so, some caveats should be noted. In 1989, Wylie lamented that establishment of more sound self-concept measures was hindered by poor theorizing in the domain. Since then, progress has been made to develop structures and theories regarding the nature of self-concept and self-esteem, but more work is needed. Earlier calls for the necessity of addressing social desirability (Shavelson, Hubner, & Stanton, 1976; Zirkel, 1971) have not been heeded. Surprisingly, cognitive ability was found in almost *no* study detailed in this review. Why this is so is uncertain, but such a rich, potential source of variance ought to be taken into account in future studies.

Specific to self-esteem measurement for ethnic minorities, Zirkel (1971) noted that some have attributed higher Black self-esteem to defensive responding. It is interesting that whether self-esteem reports are defensive or true, higher scores for Blacks are still predicted by cool pose theory. cool pose theory suggests Blacks sometimes try to keep Whites from knowing their true feelings, so ethnicity of experimenter may be important in future studies to determine validity of self-esteem reports. It is true that

Rosenberg and Simmons (1972) found no effect by experimenter ethnicity, but precious few others have even looked.

While a healthy dose of skepticism is appropriate for any self-report instrument, there really may be no good way around it when the self is both judge and object of judgment. Hattie (1992) said, "There can be no perfectly reliable or valid indicator of an individual's self-concept…" (p. 246). After intensive review spanning two decades, Wylie (1989) agreed: "…some form of self-report appears to be the most appropriate (perhaps the only) way to try to index self-conceptions…" (p. 119). What needs to be done instead is including other measures that attempt to address some of the problems discussed here. The current meta-analysis and narrative review is also a step in the right direction, as common methodological critiques of self-esteem include small sample size, lack of linkage to theory, using non-standardized measures, and definitional imprecision, which the format of this review has inherently addressed.

Goal Two: Ascertaining the Relationship between Self-Esteem and Academic Achievement

The analysis revealed a small,[1] significant relationship between self-esteem and academic achievement, $r = .17$ (see Table 4).[2] The fail-safe N of 190 implied a robust finding. Unweighted effects are displayed in Figure 1. The heterogeneity test, $Q = 302.55, p < .001$, determined a need to review moderators.

As predicted, self-concept, which included an academic subscale in most cases, produced a larger effect size, $r = .24$ (see Table 4). This finding was also robust, fail-safe $N = 365$, and heterogeneous, $Q = 324.60, p < .001$. Figure 1 shows unweighted effect sizes. Additional statistics and figures related to self-concept can be found in Appendix B.

Goal Three: Determining if Ethnicity Impacts the self-esteem-academic achievement Relationship

Ethnicity. Ethnicity moderated the self-esteem/academic achievement relationship, $Q_b = 30.43, p < .001$ (see Table 5). Blacks had a significantly lower relationship between self-esteem and academic achievement, $r = .14$, than Whites, $r = .20$, but not mixed samples, $r = .15$.[3] This supports the ethnic difference theories, not traditional self-esteem theories. Paired contrasts for ethnicity and all other variables can be seen in Table 6.

Age/grade. When first tested as a continuous variable, age showed no linear relationship with the self-esteem/academic achievement effect sizes, $R = .06$ (see Table 7). Treating age/grade as a categorical variable helped explain why. Differences were found at progressive levels of education, $Q_b = 82.59$, $p < .001$, indicating a nonlinear pattern. Teacher ratings of self-esteem were removed from elementary school because they were shown to be substantially different from other measures (see "self-esteem measure" below).[4] Subsequently, the self-esteem/academic achievement relationship was equivalent from elementary, $r = .16$, to middle school, $r = .15$; increased in high school, $r = .21$; and decreased in college, $r = .09$.

This age trend supports developmental expectations outlined by Erikson (1968a, 1963): school achievement is important to adolescents and loses weight for young adults. Similar results were found by Seidman, Aber, Allen, and French (1996), who found no difference the relationship with a multi-ethnic sample moving from middle to high school ($r = .09$). Bachman and O'Malley (1977) also determined education to be less salient to men's self-esteem after high school.

Gender. Gender was not a moderator of the self-esteem/academic achievement relationship, $Q_b = 0.10$, $p = .73$ (see Table 5).[5] Effect sizes were similar for females, $r = .20$, and males, $r = .19$. This finding is not inconsistent with either traditional self-esteem theories or ethnic difference theories.

Socioeconomic status (SES). SES did not moderate the relationship between self-esteem and academic achievement, $Q_b = 1.43$, $p = .70$ (see Table 5). This finding is in-line with traditional self-esteem theories but is also not inconsistent with ethnic difference theories.

Data collection year. Year of data collection was found to moderate the self-esteem/academic achievement relationship such that it weakens in recent years, $\beta = -.37, p = .01$ (see Table 7 for data, Figure 2 for graphic depiction). Earlier, O'Malley and Bachman (1979) had investigated a cultural trend hypothesis and rejected it based on two national studies done in the late 1960s and 1970s. Yet over a longer span of time, the effect stands. When Hansford and Hattie (1982) looked at publication year, the effect was $r = -.14$, so the relationship between self-esteem and academic achievement appears to be weakening. This gives way to three possible explanations. The first is a cultural effect model, that it is becoming more acceptable to claim high self-esteem (Twenge and Campbell, 2001). The second explanation is that people as a whole are becoming more disidentified with academics. The third possibility, as predicted by ethnic difference theories, is that more minority samples are being included in recent years, who show a weaker relationship to begin with. For instance, Kalanek's unpublished study (1997) involves a newly developed self-esteem instrument, and it is the first large-scale sample ($N = 13{,}373$) that includes 45% minority individuals. Here, the effect is lower than average, $r = .12$. Osborne (in press) provides further illumination by following three cohorts of national database seniors: 1972, 1982, and 1992. Controlling for SES he found a steady decrease across time for boys of color (Blacks, Native Americans, and Latinos) by year but not for White or Asian American/Pacific Islander boys. Girls of any ethnicity did not show the same pattern of decrease (see Table 8).

Self-esteem measure. Type of self-esteem measure moderated the self-esteem/academic achievement relationship, $Q_b = 85.96, p < .001$. Teacher estimates of students' self-esteem, $r = .42$, were significantly different from any other measure. This might suggest bias in teachers' ratings of children's self-esteem that are influenced by their known academic performance. Besides teacher ratings, the Rosenberg Self-Esteem Scale showed the strongest effect sizes, above other self-report measures (see Table 5).

Academic achievement measure. Academic achievement measure was not shown to act as a moderating variable, $Q_b = 3.26, p = .35$ (see Table 5). Thus, it does not appear that standardized tests, teacher ratings, and either self-reported or collected grades impact the self-esteem/academic achievement relationship differentially.

Publication status. Publication status was found to moderate the relationship between self-esteem and academic achievement, $Q_b = 21.91, p < .001$. Unpublished studies, $r = .16$, showed a weaker effect than published studies (see Table 5). It appears the file drawer problem has some impact on this body of literature. However, the fail-safe N for the overall relationship is still relatively large, so published results can be accepted with some confidence.

Ethnicity, age, and gender interactions. Considering interactions between these three variables is really the only way to help distinguish between ethnic difference theories, as several of them take gender and age trends into account. Each pair-wise interaction and the three-way interaction of ethnicity, gender, and age will now be discussed.

Overall, there were no differences between the four subgroups formed by gender and ethnicity, $Q_b = 3.44, p = .33$. This falls more in line with traditional self-esteem theories. However, the grade by gender interaction was significant, $Q_b = 57.24, p < .001$. During elementary and middle school, females' identities are more strongly linked to academic achievement than males, while the reverse is true in high school and college (see Table 5). This suggests a developmental impact that differs for males and females, which was proposed by Bardwick (1971). This also argues against traditional self-esteem theories but does not yet challenge ethnic difference theories. Further, the interaction between ethnicity and grade was significant, $Q_b = 46.87, p < .001$. There were too few elementary samples to be included, but effect sizes were similar between Blacks and Whites in middle school ($r = .16$ and $r = .18$) but showed a widening gap during high school ($r = .18$ and $r = .21$) and college ($r = .04$ and $r = .13$). Please see Figure 3. Moreover, linear regression of effect sizes by age was significant for Blacks, $\beta = -.71$, but not for Whites, $\beta = -.10$. See Figure 4 for graphic representation. The current analysis shows ethnic differences to be happening in addition to overall differences explained by development. Twenge & Crocker's (2002) meta-analytic review of ethnic differences in self-esteem is also supportive. They showed that a Black advantage for self-esteem increased from elementary school to college. Thus, it appears that while the self-esteem of Whites stays tied to academics, the self-esteem of Blacks generally does not. This gradual disengagement from academic achievement by Black individuals is specifically predicted by stereotype threat. It is also extrapolated from cultural inversion and cool pose theory.

Sufficient samples did not exist to test a three-way interaction. However, two sets of data were found that included this information. The first was derived from the National Educational Longitudinal Study of 1988 (NELS88). Osborne (1997b) looked at self-esteem and academic achievement while controlling for SES, with separate correlations by ethnicity, gender, and data collection year. Subjects were first assessed in eighth grade. At this point, boys and girls of all ethnicities showed significant correlations between self-esteem and academic achievement. Most groups decreased somewhat by their senior year, but the relationships were still significant. The exception was Black males, for whom effects dropped to between $r = -.06$ and .04 (see Table 9). These findings strongly contradict traditional self-esteem theories. The difference only for Black males lends support both to stereotype threat and cool pose theory, while it was not predicted by cultural inversion theory.

The second source of data was unpublished. In a series of emails, Eccles and Malanchuk (personal communication, April 23-August 21, 2002) provided data first described in Winston et al. (1997). This included quasi-longitudinal and longitudinal correlations involving a three-wave measurement across seventh, eighth, and eleventh grade, also separated by gender and ethnic group.

These results did not show same pattern as Osborne's (1997b). Similarly, most of the effects were significant in seventh grade, but unlike Osborne's data, none were significant in eleventh (see Table 10).

Several possible explanations exist for the differences between the two data sets. Eccles and Malanchuk's data included smaller samples that were primarily not large enough to determine significant differences in pair-wise comparisons, while Osborne's were (see Table 11). While Osborne's data on grades were all self-report, Eccles and Malanchuk's data were based on collected grades in seventh and eighth grade and self-report in eleventh grade. Perhaps the switch in achievement measure impacted the results. Osborne's self-esteem measurement was based on Rosenberg's measure, while Eccles and Malanchuk used Harter's Self-Perception Profile. Finally, the Blacks in Eccles and Malanchuk's data were slightly lower in SES than the White sample, and instruments were given face-to-face in an in-home interview. Therefore, primarily because of larger sample size and control for SES, the results from Osborne's data are given more weight in the current analysis. However, the differential effects shown by Eccles and Malanchuk suggest the need for more longitudinal samples in order to compare across studies.

Summary. Because interaction variables were significant, main effects must be discounted. Thus, ethnic difference theories are more strongly supported than traditional self-esteem theories. While the self-esteem/academic achievement relationship for Whites remains relatively stable as they age, it shrinks for Blacks so that by college age, it tends to be nonexistent. Results from Osborne (1997b) suggest the problem to be applicable to Black males but not Black females.

Goal Four: Investigating Causal Implications

Now that a relationship between self-esteem and academic achievement has been established, the question remains whether causal implications can be drawn. All of the studies included in this review so far are correlational and cross-sectional, so it is inappropriate to infer causality from this kind of methodology. However, other methods have been attempted to address causality. True experimentation is the only way to answer the question definitively. This may not be ethically possible in the realm of self-esteem, but longitudinal studies, path analysis and cross-lagged panel correlations, and, most recently, structural equation models have been attempted. Path analysis and structural equation modeling, while not allowing absolute conclusions, test theory-driven models of the relationships and to see which one best fits the data. Intervention studies, by showing what works and what does not for changing self-esteem or academic achievement or both, also give some indication of the direction of causality. Placing self-esteem within self-concept, as the current author has done, necessitates reviewing studies that have addressed both self-esteem and self-concept in causal modeling. However, remember that *global* self-esteem and self-concept are thought to be equivalent. Moreover, some studies that say self-concept below are actually using Rosenberg's Self-Esteem Scale or a derivative as the measure.

Longitudinal studies. Four independent studies have used longitudinal designs to attempt to determine causal predominance for either self-esteem/self-concept and academic achievement. The first two found kindergartners' self-perceptions of adequacy (inferred by observers) or teacher ratings of self-concept to predict reading achievement in first and second grade (Lamy, 1965; Wattenberg and Clifford; 1964). Both of these studies, however, may not necessarily have been measuring self-esteem or self-concept, as ratings came from others. The next two studies looked first to achievement. Kifer (1975) used a quasi-longitudinal design for grades two to eight, showing academic achievement to be consistently related to self-concept. Caution is also expressed regarding Kifer's findings, as he used Coopersmith's Self-Esteem Inventory, which has not held up well in critical reviews. Marsh et al. (1983), however, found changes in self-concept to be unrelated to either changes in teacher self-concept ratings or reading achievement using a composite measure of self-concept. Finally, the most powerful findings come from a recent meta-analysis of 60 longitudinal studies, which indicated greater support reciprocal effects model than any other causal model (Valentine, 2001).

Path analysis and cross-lagged panel correlation. Three sets of investigators have reviewed the Youth in Transition data involving high school boys (Bachman, Kahn, Mednick, Davidson, & Johnston, 1969). Bachman and O'Malley (1986) reportedly found that grades lead to academic self-concept and then global self-esteem in tenth grade boys. The self-esteem measure was RSE-derived, and a reciprocal model was not tested. Rosenberg, Schooler, and Schoenbach (1989) reviewed the data for reciprocal effects and found a stronger path from grades to self-esteem than self-esteem to grades, concluding that self-esteem appears to have little to no effect in enhancing academic achievement. Then, Marsh (1987) tested the relationship between grade point average, academic self-concept, and self-esteem. Again, the relationship from grades to self-esteem was stronger through academic self-concept. Moreover, when academic self-concept was accounted for, self-esteem no longer affected subsequent school performance. Pottebaum, Keith, and Ehly (1986) used the High School and Beyond data of the National Center for Educational Statistics (NCES, 2002) with a two-year interval and an N of 18,792. In this sample, no predominance of either self-esteem (RSE-derived) or standardized test scores was indicated. Moyer (1980) looked at self-esteem (RSE-derived) and self-reported grades in 6,198 high school students in the National Longitudinal Study of 1972 (NLS72). Using path analysis, there was stronger support for self-concept leading to academic achievement than vice versa. Yet, cross-lagged panel correlation showed influence from academic achievement to self-concept, altogether suggesting reciprocal influence. Even so, the relationship was small, $r < .20$, indicating a need to look at other variables.

Overall, reciprocal effects and connection between self-esteem and academic achievement through academic self-concept were indicated. As the Youth in Transition data included only males, the findings have limited generalizability. It is also important to note that causal indicators in Moyer's study, "*held only for whites, the middle and upper socioeconomic classes, and females* [italics added]" (p. 3), not minorities and those of low SES.

LISREL/Structural Equation Modeling. Surprisingly, eight studies were found that incorporated stuctural modeling techniques involving self-esteem and academic achievement. Because of space limitations, these findings will be discussed briefly. Bohrnstedt and Felson (1983) found that self-esteem and academic achievement were linked only through adolescents' perception of their smartness. Liu, Kaplan, and Risser (1992) found reciprocal influence in an upper-middle class sample of 7-12th graders. In their study, there was a direct link of academic achievement to self-esteem, but it was stronger through academic self-concept. Skaalvik & Hagtvet (1990) argued that academic achievement would be predominant over self-esteem, but reciprocal effects were found between self-esteem and both academic achievement and academic self-concept in grades six and seven.[6] Byrne (1982, 1986) investigated self-esteem, academic achievement, and academic self-concept in 1,000 high school students. She was unable to determine causal predominance among the variables. In contrast, Shavelson and Bolus (1982) suggested that self-concept was predominant over academic achievement in seventh and eighth graders, yet their sample was also White and upper middle-class. Maruyama et al. (1981) using 1,613 participants, approx. 97% White, further reported no causal influence between self-esteem and academic achievement. Rather, they argued that the two constructs are only related because of shared background characteristics (e.g., social class, cognitive ability). Owens (1994) using a sample of 2,213 high school boys suggested a weak relationship from academic achievement to self-esteem, $r = .15$, and a nonsignificant relationship from self-esteem to academic achievement, $r = .08$. Lastly, Hoge et. al (1995), using 95% White sample of 323 junior high students, suggested grades have only slightly more influence on self-concept than the reverse.

While the findings related to causality for structural equation modeling are somewhat equivocal, it appears that a reciprocal effects model is most often supported. Further, the relationship between self-esteem and academic achievement appears to be stronger through the construct of academic self-concept. Noticeably lacking is modeling with minority samples.

Intervention studies. One review of studies that looked at gain scores in academic achievement and self-esteem/self-concept after interventions found the scores to be unrelated (West & Fish, 1973). To some degree, it appears educators began self-esteem interventions before the issue of causality in self-esteem and academic achievement was ever addressed, in a sense putting the cart before the horse. An early narrative review of intervention programs in elementary schools found that programs designed to increase academic skill had some effect upon self-esteem and academic achievement, whereas those designed to increase self-esteem did not (Scheirer & Kraut, 1979). Still, the impact was fairly small. Similar studies with high school students also did not show that increases in self-concept led to academic achievement. This lends some support to the skill development model – academic achievement tends to come before self-esteem. Yet, there is a great deal of variability. In 18 dissertations focusing on "activity centered" (Scheirer & Kraut, 1979, p. 139) classes for first graders, changes in academic achievement were not directly associated with self-concept change. Overall, most interventions produced some positive change in self-concept or academic achievement but not both. One notable exception is Gattis (1982), where both self-concept and academic achievement (reading not math) increased after self-concept intervention for a multi-ethnic sample of 64 sixth grade students. However, this intervention was 2-1/2 hours, five days a week, for 27 weeks, plus activities outside of school. This depth in intervention is a far cry from most other self-esteem or academic achievement interventions.

Summary. Kenny (1979) notes that low correlations, i.e., $r \leq .30$, tend to yield disappointing and confusing results regarding causality. In the case of self-esteem and academic achievement, this is very true; the results are rather imprecise. However, the overwhelming majority of researchers say causal predominance of either self-esteem/self-concept or academic achievement cannot be empirically

supported (Baumeister, Campbell, & Krueger, 2002; Byrne, 1982, 1984, 1986; Covington, 1989; Hansford & Hattie, 1982; Hattie, 1992; Liu et al., 1992; Pottebaum et al., 1986; Scheirer & Kraut, 1979; Smelser, 1989; Smith, 1997; Valentine, 2001; Wylie, 1974,1979). Instead, most suggest reciprocal influence (Liu, Kaplan, & Risser, 1992; Purkey, 1970) or shared prior causes (Bachman & O'Malley, 1977; Byrne, 1982; Maruyama et al., 1981). The relationship is also stronger when mediated by academic self-concept. One major limitation of the current causal inference analyses is the overwhelming failure to include minority samples in the analyses. These models need to be tested with more diverse samples before findings can be widely generalized. Additionally, as composite measures of self-esteem as opposed to self-concept are in their infancy, the models have yet to be tested with domain-specific self-esteem elements such as academic self-esteem. Excitingly, DuBois et al. (1996) have proposed this and have created a measure of domain-specific and general self-esteem that appears to have sound psychometric properties. Perhaps this will be a next step in self-esteem theory and development.

Discussion

To review, the current study had four goals. The first goal was to address methodological concerns of self-esteem measurement. The second and third goals were to conclude if a relationship exists between self-esteem and academic achievement and whether ethnicity moderates the relationship. The fourth goal was to determine if causality inferences could be drawn.

In terms of the first goal of the study, there are currently good, reliable, and valid measures for self-esteem that warrant continued use and suggest that results for self-esteem can be interpreted. Reasonable caution is also warranted, given some methodological issues surrounding self-esteem measurement that have been broached, including the possibility of extreme response style for Blacks and social desirability. Self-esteem instruments need to develop more tests of construct validity, especially when taking ethnicity into account. Since academic achievement has been used as a measure of construct validity for self-esteem, and since the relationship does not hold as strongly for Black individuals, the findings challenge one of the long held assumptions of the self-esteem construct. Further, the few studies that could be found regarding reliability of self-esteem measures with minority samples show that the internal consistency may be lower for Blacks. In future research, more tests of reliability, validity, and factor analysis with minority individuals will be important to test other assumptions of self-esteem. Currently, too many researchers simply do not take cultural factors into account (Byrne, 1996).

The second goal of the study was accomplished by finding a small, significant correlation between self-esteem and academic achievement. The a priori distinction drawn between self-esteem and self-concept appears to be valid. Effect sizes for the self-concept/academic achievement relationship were larger, indicating that multi-faceted self-concept measures appear to be measuring something slightly different from global self-esteem and that self-concept measures with an academic subscale inflate the relationship between self-concept and academic achievement.

The third goal of the study was also met. There were ethnic differences in the relationship between self-esteem and academic achievement such that the effect was smaller for Blacks than Whites. This worsens as subjects age; effects are similar for Blacks and Whites in middle school, but the gap widens through college until Blacks' self-esteem is unrelated to academic achievement. Disidentification appears to be worse for boys than girls, and the difference in effect sizes is not fully explained by developmental trends or gender differences. Boys as a whole generally identify with school more than girls in high school and college, but this was not true for Black males. Limitations of the review included too few, separate effect sizes for Black and White males and females both early elementary and college age to look at the anchors of the age continuum. Further, the results in elementary school must be interpreted with caution, as self-esteem does not appear to take on abstract content until around the age of eight (Harter, 1983). Though most categorical sample sizes were sufficient, the within-group heterogeneity tests for ethnicity, as well as all others that will now be reported, were significant. However, taken together, these findings support ethnic difference theories over traditional self-esteem theories. What they do not accomplish is differentiating ethnic difference theories to determine which of them holds a better explanation for the results. Thus, critical review of other findings related to the theories will now be completed.

First, there is some support for Ogbu's (1986) caste-like minority proposition in cultural inversion theory, which suggests Blacks reject schooling as a White cultural value. Blacks with less political power than Whites in other areas, like South Africa and Australia, tend to show the same disidentification pattern (Mboya, 1999; Wright & Parker, 1978). However, contrary to one of Obgu's propositions, recent research shows that Blacks do not necessary devalue schooling. For instance, Steinberg, Dornbusch, and Brown (1992) found that African-American and Latino(a) teens were just as likely as White students to value education, as were their parents. Ogbu also proposed that Black students encountered more discrepancy between cultural values taught at home and those taught in school. Arunkumar, Midgley, and Urdan (1999) created a home-school dissonance measure to test this and found no significant differences between Blacks and White adolescents in terms of dissonance. Voelkl (1997), rather than using self-esteem/academic achievement relationship, created a 16-item school identification survey with eighth graders. Blacks generally scored higher than whites on identification with school, which at first glance seems to go against disidentification theories. However, half the items on the test really spoke to values, e.g., "School is more important than most people think" (p. 302). The measure is confounded; it would have been better as two subscales for valuing and school identification. Further, when it was used in correlations, the identification measure was related to school achievement for Whites but not Blacks, supporting disidentifcation theories.

While there is not substantial evidence that Blacks students devalue school, one study reported that they devoted less time to homework, perceived parents as having lower academic standards, and were less likely to believe academic success came from working hard (Steinberg, Dornbusch, & Brown, 1992). These same researchers said parents were less influential for Black adolescents than Whites, which supports cool pose theory. In some circles of Black students, peer support for academic success appears to be very limited. Specific self-beliefs regarding school performance have shown significant relationships with self-esteem for White but not Black adolescents, while non-academic self-beliefs (competence, appearance, peers, parents) generally showed same importance for Blacks and Whites (Tashakkori, 1993). Mickelson (1990) notes that an attitude-achievement paradox exists for Blacks. They tend to value education, embracing the link between education and job mobility even more strongly than Whites. However, they often learn to view education with less hope for success than their White counterparts. Further, it is specific, concrete beliefs about school that relate more strongly to performance in school than do their abstract attitudes and values. Similarly, Schmader, Major, and Gramzow (2001) found Black college students discounted standardized test results, but they did not value doing well in school any less than White students. When specifically measuring disengagement from school, higher disengagement related to higher self-esteem and lower grade point averages. Graham's review of attribution research (1994) also found little indication that Blacks devalued achievement, as measured by educational and vocational aspirations. All of these findings argue against Ogbu's cultural inversion theory.

With a good bit of literature discounting cultural inversion theory, it is left to distinguish between cool pose and stereotype threat theory. That Black males appear to be less identified with school than Black females and Whites is consistent with either theory, and this review is not the only study to find such evidence. Ford (1992) studied 148 "gifted" and average, male and female, Black, fifth and sixth graders. Gifted males had the lowest GPAs of all children measured. In general, these students supported the American achievement ideology – they said school was important. However, gifted males strongly supported an underachievement subscale and showed the lowest levels of effort. This led Ford to surmise, "Clearly, African-American students, particularly males and those in lower tracks or ability groups, appear to place less significance on education and its ability to fulfill promises of upward mobility, equal opportunity, and employment for all American citizens…" (p. 248-249).

Now consider the evidence in support of stereotype threat theory. Does the relationship between self-esteem and academic achievement shrink simply because Black students tend to do more poorly in school? Not inevitably, as the lack of self-esteem/academic achievement relationship holds even for those Black students targeted to reward high academic performance, with grade point averages above 2.7 (Ward, 1996). Is the stereotype really that *all* Blacks do more poorly in school? Perhaps not - Graham, Taylor, and Hudley (1998) asked Black, White, Latino, and Latina adolescents whom the characteristics of "not trying in school" and "not following rules" most applied to. The overwhelming choice was African American and Latino boys. Other recent research with a multi-ethnic sample of junior high students has shown that the academic disengagement stereotype holds specifically for minority (Black and Latino) males, not females (Hudley & Graham, 2001). Finally, in terms of age, stereotype threat theory was really the only one that made clear predictions about disidentification worsening over time.

Even with evidence supporting stereotype threat theory, it is likely not the only explanation of Black male disidentification. Steele (1999) himself found students who did not identify with academic domains were not affected by stereotype threat conditions. Cool pose theory suggests Black males often adopt poses of aloofness in response to social difficulties, which may make peer acceptance more salient to self-esteem than school performance. One study finds evidence to support cool pose theory. Graham et al. (1998) used peer nomination to find out who students admired and most wanted to be like. This procedure taps valued characteristics rather than directly asking students what they valued, thereby avoiding the issue of social desirability in self-report. Girls in the study admired high-achieving, female classmates. White boys looked up to high-achieving, same ethnicity classmates. In contrast, minority boys (African American and Latino) *least* valued high-achieving male students. Thus far, both cool pose and stereotype threat theory give plausible reasons for the disidentification seen most strongly in Black males.

Because they create social barriers, lower SES and discrimination are also likely to share their piece of the disidentification pie, for "The individual who can attribute at least part of the failure and deficiencies he encounters to the external world rather than to his own limitations is able to maintain a loftier view of his worthiness," (Coopersmith, 1967, p. 43). Thus, while the review largely discounts cultural inversion theory, it supports both stereotype threat and cool pose theory and other social barriers as reasonable explanations for sources of Black males' disidentification from academic achievement as they age.

Regarding the fourth goal, while it has been shown that global self-esteem can be measured in reliable, valid ways (Baumeister, 1993), another claim is that it has held little relation with many outcomes. In terms of academic achievement, this is true to the extent that the correlation is small. However, illusory correlation does not appear to be the case (Baumeister, Campbell, & Krueger, 2002); reciprocal effects models were strongly supported by the current review. Seligman (1995) has emphasized that little evidence exists for claiming self-esteem causes much of anything, and this criticism is well heeded. Causal evidence for the predominance of self-esteem *or* academic achievement is simply weak. While the reciprocal effects model is most strongly supported, disidentification for Black students as they age shows that an area can be dismissed as relevant to self-esteem. So should education's goal for all students (and minorities in particular) continue to be increasing their self-esteem, when, at least for Blacks, it tends to be higher already? That answer is a resounding no. Seligman (1995) puts it nicely:

> "Feelings of self-esteem in particular, and happiness in general, develop as side effects – of mastering challenges, working successfully, overcoming frustration and boredom, and winning. The feeling of self-esteem is a byproduct of doing well. Once a child's self-esteem is in place, it kindles further success….There is no question that feeling high self-esteem is a delightful state to be in, but trying to achieve the feeling side of self-esteem directly, before achieving good commerce with the world, confuses profoundly the means and the end…Bolstering the feeling side of self-esteem without breaking the shackles of hopelessness or passivity accomplishes nothing." (p. 33-34).

Scheirer and Kraut (1979) concur that emphasizing self-esteem in intervention programs with hopes that it will directly lead to academic achievement is kind of useless. It is not supported by the intervention literature, and data provided here suggest the same. If children have disidentified with academic achievement for any reason, trying to boost self-esteem may be a nice goal of its own, but is unlikely to start them embracing school success again. Further, Scheirer and Kraut say that self-concept change will follow increased academic achievement only when accompanied by social approval. From the perspective of cool pose theory, this appears to be one source of difficulty for Black males – doing well in school does not necessarily impress their peers or gain respect. Therefore, it is not as likely to be linked to self-esteem.

Implications

Whether or not one sees self-esteem and self-concept as equivalent or different constructs makes some difference in the outcomes one can expect in relation to academic achievement. There is enough evidence to maintain self-esteem as the evaluative component of the self and self-concept as descriptive.

In the future, studies that use self-esteem should be careful to define how they see self-esteem and self-concept relating.

While a relationship exists between self-esteem and academic achievement, studies that combine ethnic groups are likely to be missing an important source of variance. The relationship is complex – Black/White differences do not exist across all ages. Disidentification appears to happen with time and more strongly for Black males. In the current review, the most support is seen for stereotype threat and cool pose theories as explanations of the research findings. The influences upon minority children are not likely to be unidimensional – many things impact them, and it is possible that more than one hypothesis about culture can be right at the same time (Neisser, 1986). We might predict the pattern for self-esteem and academic achievement could go thus. Black students, like any ethnic group, can be divided into two camps: those that identify with academics and those that do not. Black boys, while starting on the same footing with others, tend to lend less weight to academics as they age. Here is where cool pose theory is relevant. For those boys and girls that continue to identify with academics, stereotype threat can have an impact. Therefore, even while valuing school performance, it can still be rejected as a source of self-esteem. Again, stereotypes for not doing well at school appear to be targeting minority males.

Some very reachable goals for improvements in looking at the self-esteem/academic achievement relationship with minority students are suggested for future research. To secure against defensive responding, a measure of social desirability should be used, or following Rosenberg's suggestion (1965), anonymity in responding. A second rater of self-esteem would be helpful. This is supported by Dubois et al.'s (1996) finding of substantial agreement between self-report, interview, and parent ratings. An anxiety measure could be included as a validity check. Extrapolation from Branden (1969) suggests that anxiety is antithetical to self-esteem; Rosenberg (1965) previously used anxiety as construct validity, finding that self-esteem and anxiety were negatively correlated. Further, very rarely are things like cognitive ability and SES controlled in studies (Wylie, 1979), and both should be addressed. Finally, as previously stated, tests of reliability and validity need to be done specifically for minority samples, without assuming that measures normed and validated on White, upper-middle class samples will work the same way for other ethnic groups. One of the most recently developed instruments, the SEQ, is the first to compare ethnic differences in self-esteem in its initial report, finding Blacks higher than Whites in peer, body image, and sports self-esteem, but lower in school self-esteem and no different in global self-esteem (DuBois et al., 1996). This measure has particular promise for minority samples because of its diverse norm base and because of its theoretically-driven inclusion of only evaluative rather than descriptive statements for its items.

Finally, interventions based on raising self-esteem are no longer appropriate, especially with minority students. Early models of the construct generally believed minorities were deficient in self-esteem compared to Whites, but this is not generally so. Moreover, the causal influence of self-esteem on academic achievement is not supported. It appears a good deal of damage may have been done by well-intended schools trying to align the relationship this way, or at least a good bit of class time has been wasted. Erikson (1967b), like Seligman (1997), claimed artificial self-esteem boosting does students a great disservice. Rather, self-esteem should be grounded in legitimate accomplishments valued by students' culture. Even so, academic achievement as an intervention strategy does not seem to be the sole goal for minority students either. Instead, approaches need to incorporate attempts to keep minority children identified with school. This could include both increasing their sense of belongingness in school settings and directly challenging their values so that school success meets with more peer approval.

Interventions with a cognitive focus also look promising. Those targeting self-efficacy tend to result in improvements in achievement, participation, and satisfaction in school (Hattie, 1992; Hattie & Marsh, 1996; Pajares & Schunk, 2002; Smith, 1997). Valentine's (2001) meta-analysis found the strongest relationships between self-efficacy and academic achievement, with the weakest links between self-concept/self-esteem and academic achievement. In the future, it will also be important to know Black students' academic self-concept, as it appears to be more predictive of academic achievement than global self-esteem. A recent meta-analysis by Gray-Little and Hafdahl (2000) showed Whites and Blacks relatively equal on academic self-concept. Jordan (1981) found self-esteem, academic self-concept, and academic achievement all to be related for 328 Black adolescents. In multiple regression, however, it was academic self-concept, not self-esteem, that best predicted achievement.

There are other suggestions for innovative approaches designed to increase self-esteem and academic achievement without directly attempting to change either one. One example is Marsh and Richard's (1996) Outward Bound, a six-week residential program that targeted goal-setting and problem solving strategies in and outside of the classroom. Outward Bound is one of few intervention studies to show *both* academic achievement and self-esteem increases. Ogbu (1991) has recommended more culturally sensitive interventions such as challenging science is not a "White" field and improving coping strategies of academically successful and popular Black children. Ford (1992) said Black children's beliefs and attitudes about school should be directly assessed, and those who do not support efficacy of schooling or achievement ideology – *especially Black males* - must be encouraged to see its value. To help reduce stereotype threat, Steele (1997) recommended replacing the remediation model with a model of challenge for struggling minority students – creating supportive, collaborative environments that convey respect for their potential, rather than emphasizing their deficits.

Concluding Remarks

Self-esteem appears to be far from the social vaccine predicted by the California Task Force (Vasconcellos, 1989). Rather, the disidentification seen here for older Black students as they age and for all Americans over time may be seen as a symptom of culture moving further and further away from realistically based self-esteem (Twenge & Campbell, 2001). Twenge and Campbell's argument is that educational programs' focus on self-esteem in the 1980s helped encourage self-focus and make the problem worse. Self-esteem was not originally conceptualized as narcissism; it was the feeling that one was "good enough" (Rosenberg, 1965). The average American now may not see it the same way. Seligman (1995) remarks that while self-esteem has become more heavily focused upon in recent years, rates of depression and low self-esteem have intensified. Smith (1997) notes that culturalism "asks what function education serves in the culture and what role it plays in the lives of those who operate within it" (p. 145). It appears that for adolescent and older African Americans, not much, yet Whites may not be too far behind (see Figure 5). The Black advantage for self-esteem is increasing (Twenge & Crocker, 2002) while academics are not. Still, for all of the research comparing Black and White differences, other ethnic groups cannot be left behind. Much more research is needed to include Asian Americans, Native Americans, and Latinos (Porter & Washington, 1979, 1993). America's future is ethnic diversity. Strictly White, upper-middle class samples and theories need to become a thing of the past.

Footnotes

[1] This judgment was made following Cohen (1992), where .10 is a small effect, .30 is a moderate effect, and .50 is a large effect.

[2] One unpublished sample (Kalanek, 1997) was extremely large, $N = 13{,}373$, so results were also run without this sample as a sensitivity measure. Without Kalanek's data, the effect was slightly significantly larger, $r = .18$ ($Z = 2.25$, $p = .01$). The Fail Safe N increased to 212, and the sample remained heterogeneous, $Q = 262.39$, $p < .001$. Kalanek's sample was only 55% White, suggesting a possible impact of ethnicity upon the self-esteem-academic achievement relationship.

[3] Again, as a sensitivity measure, the analysis was run with and without Kalanek (1997). Without this data, the mixed sample effect was larger, $r(7{,}334) = .21$. Hence, the mixed results became much more like White samples than Black samples, indicating the impact of ethnicity.

[4] When teacher ratings of self-esteem are included for elementary school students, the effect is almost twice as large, r(815) = .26, cultural inversion = .20-.33.

[5] Mixed gender samples were significantly different from separate male and female effect sizes, $r = .14$. This might suggest that the effect is suppressed when gender is not taken into account.

[6] Norway does not start grading students until seventh grade.

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Table 1

Studies in Main Meta-Analysis: Self-Esteem (SE) and Academic Achievement (AA)

Authors	Ethnicity	*N*	Sex	Age mean	Education	Data Collection Year	SES	SE Measure	AA Measure	Publication	*r*
Allen & Haniff (1991)	African American	1583	Mixed	20.5	College	1982	Mixed	Other	Grades (self-report)	Published	.03
Barrett Singer & Weinstein (2000)	Asian American	31	Female	19.7	College	1998	Middle	SPP	Grades (records)	Published	.23
Barrett Singer & Weinstein (2000)	Asian American	43	Male	19.7	College	1998	Middle	SPP	Grades (records)	Published	.07
Barrett Singer & Weinstein (2000)	Caucasian American	42	Female	19.7	College	1998	Middle	SPP	Grades (records)	Published	-.06
Barrett Singer & Weinstein (2000)	Caucasian American	32	Male	19.7	College	1998	Middle	SPP	Grades (records)	Published	.28
Bettencourt, Charlton, Eubanks, Kernahan, & Fuller (1999)	Mixed	142	Mixed	18	College	1997	Mixed	RSE^a	Grades (records)	Published	-.15
Borhnstedt & Felson (1983)	NR	207	Female	13	6-8	1975	Mixed	RSE^b	Grades (records)	Published	.17
Borhnstedt & Felson (1983)	NR	204	Male	13	6-8	1975	Mixed	RSE^b	Grades (records)	Published	.24
Buller-Taylor (1999)	Canadian	6207	Mixed	15.7	8-12	1995	Mixed	RSE^c	Grades (self-report)	Unpublished	.20
Byrne (1986)	Canadian	1018	NR	13.6	9-12	1980	Upper Middle	CSEI	Standardized (reading)	Published	.17

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				Age		Data Collection		SE			
Authors	Ethnicity	*N*	Sex	mean	Education	Year	SES	Measure	AA Measure	Publication	*r*
Carlson et al. (1999)	African American	18	Mixed	8	1-3	1982	Lower	Teacher Rating	Standardized (composite)	Published	.45
Carlson et al. (1999)	Caucasian American	57	Female	8	1-3	1982	Lower	Teacher Rating	Standardized (composite)	Published	.49
Carlson et al. (1999)	Caucasian American	65	Male	8	1-3	1982	Lower	Teacher Rating	Standardized (composite)	Published	.51
Castro (1999)	Mixed	221	Mixed	13	6-8	1993	Lower	SPP	Grades + Teacher Report	Unpublished	.11
Chang (1976)	Mixed	198	Mixed	11	4-6	1974	Lower	Teacher Rating	Standardized (reading)	Published	.33
Epps (1969)	African American	1417	Female	10.6	9-12	1966	Mixed	RSE[b]	Grades (records)	Published	.19
Epps (1969)	African American	1121	Male	10.6	9-12	1966	Mixed	RSE[b]	Grades (records)	Published	.26
Fink (1962)	NR	48	Female	16.5	High School	1960	NR	Clinical Measures	Grades (records)	Published	.21
Fink (1962)	NR	40	Male	16.5	High School	1960	NR	Clinical Measures	Grades (records)	Published	.60
Fischer (1995)	African American	60	Mixed	24	College	1992	Lower Middle	SDQ-III	Grades (self-report)	Unpublished	.29
Fischer (1995)	Arab American	35	Mixed	24	College	1992	Lower Middle	SDQ-III	Grades (self-report)	Unpublished	.41
Fischer (1995)	Caucasian American	60	Mixed	24	College	1992	Lower Middle	SDQ-III	Grades (self-report)	Unpublished	.14

Authors	Ethnicity	*N*	Sex	Age mean	Education	Data Collection Year	SES	SE Measure	AA Measure	Publication	*r*
Frerichs (1971)	African American	78	NR	12	6	1969	Lower	RSE	Grades (records)	Published	.37
Griffore, Kallen, Popovich, & Powell (1990)	Caucasian American	111	Female	15.5	College	1988	Upper Middle	RSE[a]	Grades (self-report)	Published	.17
Griffore, Kallen, Popovich, & Powell (1990)	Caucasian American	71	Male	15.5	College	1988	Upper Middle	RSE[a]	Grades (self-report)	Published	.11
Gross & McCallum (2000)	Mixed	100	Female	15	High School	1998	Middle	BASC	Grades (self-report)	Published	.16
Jordan (1981)	African American	151	Female	14	8	1979	Lower	RSE[a]	Grades (records)	Published	.19
Jordan (1981)	African American	177	Male	14	8	1979	Lower	RSE[a]	Grades (records)	Published	.12
Kalanek (1997)	Mixed	13373	Mixed	13	Middle School	1994	Mixed	SEQ	Grades (self-report)	Unpublished	.12
Killeya (2001)	African American	15	Male	20.4	College	1999	NR	RSE[a]	Grades (records)	Published	.51
Killeya (2001)	Caucasian American	15	Male	19.9	College	1999	NR	RSE[a]	Grades (records)	Published	-.26
Liu, Kaplan & Risser (1992)	NR	242	Mixed	15.4	7-12	1986	Upper Middle	RSE[d]	Grades (records)	Published	.16
Luster & McAdoo (1995)	African American	121	Mixed	26	College	1981	Lower	RSE[a]	Grades (records)	Published	.00

				Age		Data Collection		SE			
Authors	Ethnicity	*N*	Sex	mean	Education	Year	SES	Measure	AA Measure	Publication	*r*
Maney (1990)	NR	443	Mixed	21.3	College	1987	NR	RSE[a]	Grades (self-report)	Published	.11
Miyamoto et al. (2000)	Mixed	696	Mixed	15.6	9-12	1998	Mixed	RSE[a]	Grades (self-report)	Published	.20
Mwamwenda & Mwamwenda (1987)	African	1060	Mixed	13.9	Middle School	1985	NR	Other	Standardized (composite)	Published	.19
NELS (2002)	African American	733	Female	14	8	1988	Mixed	RSE[c]	Grades (self-report)	Unpublished	.21
NELS (2002)	African American	636	Male	14	8	1988	Mixed	RSE[c]	Grades (self-report)	Unpublished	.07
NELS (2002)	American Indian	249	Female	14	8	1988	Mixed	RSE[c]	Grades (self-report)	Unpublished	.10
NELS (2002)	American Indian	243	Male	14	8	1988	Mixed	RSE[c]	Grades (self-report)	Unpublished	.18
NELS (2002)	Asian American	460	Female	14	8	1988	Mixed	RSE[c]	Grades (self-report)	Unpublished	.17
NELS (2002)	Asian American	454	Male	14	8	1988	Mixed	RSE[c]	Grades (self-report)	Unpublished	.09
NELS (2002)	Caucasian American	4392	Female	14	8	1988	Mixed	RSE[c]	Grades (self-report)	Unpublished	.22
NELS (2002)	Caucasian American	4220	Male	14	8	1988	Mixed	RSE[c]	Grades (self-report)	Unpublished	.15

				Age		Data Collection		SE			
Authors	Ethnicity	*N*	Sex	mean	Education	Year	SES	Measure	AA Measure	Publication	*r*
NELS (2002)	Latina	922	Female	14	8	1988	Mixed	RSE^c	Grades (self-report)	Unpublished	.09
NELS (2002)	Latino	825	Male	14	8	1988	Mixed	RSE^c	Grades (self-report)	Unpublished	.13
Newbegin & Owens (1996)	Australian	276	Male	14.5	6-11	1994	NR	SDQ-II	Standardized (math)	Published	.21
Nguyen et al. (1999)	Vietnamese American	182	Mixed	15	6-12	1997	Lower	RSE^a	Grades (records)	Published	.12
Oates (2002)	African American	590	NR	20.5	12	1972	Mixed	RSE^d	Standardized (composite)	Unpublished	.08
Oates (2002)	Caucasian American	5437	NR	20.5	12	1972	Mixed	RSE^d	Standardized (composite)	Unpublished	.19
O'Brien (2001)	NR	386	Mixed	13	6-8	1998	Middle	RSE^a	Grades (self-report)	Published	.36
O'Malley & Bachman (1979)	Mixed	1689	Female	18	12	1977	Mixed	RSE^e	Grades (self-report)	Published	.24
O'Malley & Bachman (1979)	Mixed	1494	Male	18	12	1977	Mixed	RSE^e	Grades (self-report)	Published	.25
Perry (2000)	Mixed	171	Mixed	14.5	8-9	1997	Mixed	RSE^a	Standardized (composite)	Unpublished	-.07
Portes & Wilson (1976)	African American	256	Mixed	16	10	1968	Mixed	RSE^f	Grades (self-report)	Published	.21
Portes & Wilson (1976)	Caucasian American	1957	Mixed	16	10	1968	Mixed	RSE^f	Grades (self-report)	Published	.28

Authors	Ethnicity	*N*	Sex	Age mean	Education	Data Collection Year	SES	SE Measure	AA Measure	Publication	*r*
Scherneck (1998)	NR	273	Mixed	19.4	College	1995	NR	RSE[a]	Grades (records)	Unpublished	.14
Scherneck (1998)	NR	269	Mixed	19.4	College	1995	NR	RSE[a]	Grades (records)	Unpublished	.11
Seidman, et al. (1996)	Mixed	330	Mixed	14	Middle School	1988	Lower	SPP	Grades (self-report)	Published	.09
Skaalvik (1983)	Norwegian	43	Female	14	8	1981	NR	SPP[g]	Teacher Rating	Published	.07
Skaalvik (1983)	Norwegian	29	Female	12	6	1981	NR	SPP[g]	Teacher Rating	Published	.05
Skaalvik (1983)	Norwegian	38	Female	10	4	1981	NR	SPP[g]	Teacher Rating	Published	.06
Skaalvik (1983)	Norwegian	40	Female	9	3	1981	NR	SPP[g]	Teacher Rating	Published	.39
Skaalvik (1983)	Norwegian	30	Female	8	2	1981	NR	SPP[g]	Teacher Rating	Published	.46
Skaalvik (1983)	Norwegian	32	Male	14	8	1981	NR	SPP[g]	Teacher Rating	Published	.26
Skaalvik (1983)	Norwegian	36	Male	12	6	1981	NR	SPP[g]	Teacher Rating	Published	.43
Skaalvik (1983)	Norwegian	38	Male	10	4	1981	NR	SPP[g]	Teacher Rating	Published	.22

Authors	Ethnicity	*N*	Sex	Age mean	Education	Data Collection Year	SES	SE Measure	AA Measure	Publication	*r*
Skaalvik (1983)	Norwegian	28	Male	9	3	1981	NR	SPP^g	Teacher Rating	Published	-.06
Skaalvik (1983)	Norwegian	34	Male	8	2	1981	NR	SPP^g	Teacher Rating	Published	.09
Skaalvik & Hagtvet (1990)	Norwegian	271	NR	9	3	1984	NR	SPP^g	Teacher Rating	Published	.12
Tsai, Ying, & Lee (2001)	Asian American	179	Female	20.2	College	1999	Middle	RSE^a	Grades (self-report)	Published	.05
Tsai, Ying, & Lee (2001)	Asian American	174	Male	20.2	College	1999	Middle	RSE^a	Grades (self-report)	Published	.17
Ward (1996)	African American	54	Mixed	16.2	9-10	1992	Middle	RSE^a	Grades (records)	Unpublished	-.04
Winston et. al (1997)	African American	402	Female	13	7	1994	Middle	SPP	Grades (records)	Unpublished	.16
Winston et. al (1997)	African American	435	Male	13	7	1994	Middle	SPP	Grades (records)	Unpublished	.16
Winston et. al (1997)	Caucasian American	226	Female	13	7	1994	Middle	SPP	Grades (records)	Unpublished	.07
Winston et. al (1997)	Caucasian American	212	Male	13	7	1994	Middle	SPP	Grades (records)	Unpublished	.20
Witherspoon, Speight, & Thomas (1997)	African American	86	Mixed	15.4	9-12	1995	NR	POI	Grades (records)	Published	.02
Woodard & Suddick (1992)	Mixed	183	Mixed	36.7	College	1990	NR	RSE^a	Grades (self-report)	Published	.37

				Age		Data Collection		SE			
Authors	Ethnicity	*N*	Sex	mean	Education	Year	SES	Measure	AA Measure	Publication	*r*
Yaffe (1998)	Canadian	407	Mixed	19.3	College	1995	NR	RSE[a]	Grades (records)	Unpublished	.05

Note. NR = not reported. BASC = Behavior Assessment System for Children Self-Report of Personality, Self-Esteem Scale; CSEI = Coopersmith Self-Esteem Scale, General Self subscale; POI = Personal Orientation Inventory, Self-Regard subscale; RSE = Based on Rosenberg's Self-Esteem Scale; SDQ-II = Self Description Questionnaire-II, General Self subscale; SDQ-III = Self Description Questionnaire-III, General Self subscale; SEQ = Self-Esteem Questionnaire, Global Self-Worth subscale; SPP = Harter's Self-Perception Profile, Global Self-Worth subscale. SES = socioeconomic status. Standardized = standardized achievement test.

[a] 10 items. [b] Five items. [c] Seven items. [d] Four items. [e] RSE, four items, plus four additional. [f] RSE, six items, plus four additional. [g] Seven items, plus six additional.

Table 2

Reliability Estimates for Self-Esteem Inventories

Author	Ethnicity	*N*	Age	Coeff. α	Test-rest r
RSE					
Alsaker & Olweus (1986)[a]	Norwegian	2,478	12.5	.80	
Bettencourt et al. (1999)[b]	Multiethnic	142	18	.89	
Buller-Taylor (1999)[c]	Asian American	701	14	.76-.80[d]	
	Black	2,720	14	.65-.69	
	Latino	2,053	14	.73-.77	
	White	15,563	14	.76-.80	
Davis, Johnson, Cribbs, & Saunders (2002)[b]	Black	231	14.5	.78	
Jordan (1981)[b]	Black	328	14	.52-.61[d]	
Liu et al. (1992)[c]	Not Reported	242	15.4	.70	
Luster & McAdoo (1995)[b]	Black	121	19	.81	
Maney (1990)[b]	Not Reported	46	21.3	.88	
Miyamoto et al. (2000)[f]	Multiethnic	696	15.6	.85	
NELS data (2002)	American Indians	476	14	.72	
	Asian/Pacific Islanders	442-451[d]	14	.77-.78	
	Blacks				
	Latino(a)s	608-712[d]	14	.67-.69[d]	
	Whites	798-898[d]	14	.73-.76[d]	
		4143-4311[d]	14	.76-.81[d]	
Nguyen et al. (1999)[b]	Asian American[e]	182	15	.71	
O'Malley & Bachman (1979)[f]	Multiethnic	3,183	18	.79-.83[d]	
Osborne (1997a)[b]	Multiethnic (91% White)	165	19	.91	
Scherneck (1998)[b]	Not Reported	512	19.4	.92	.89 (1 week)
Tashakkori (1993)[g]	Black/White	637	13	.60	
Tsai et al. (2001)[b]	Asian American	353	20.2	.86	.90 (1 month)
Wylie (1989)	Not Reported	Varies	Varies	.72-.92	.85-.91
Yaffe (1998)[b]	Multiethnic (Canadian)	407	19.3	.88	

Author	Ethnicity	*N*	Age	Coeff. α	Test-rest r
SDQ-II; SDQ-III					
Fischer (1995)[h]	Multiethnic	155	24	.75	
Newbegin & Owens (1996)[h]	Australian	276	14.5	.81	
Wylie (1989)	Australian	3,073	13-17	.88	.85 (7 weeks) *N* = 137 8th grade girls)
SEQ[f]					
Dubois et al. (1995)	Multiethnic	1,800	11-14	.86	.81
	Multiethnic	225	13-15	.81-.92	(2 weeks)
SPPC					
Seidman et al. (1996)	Multiethnic	330	14	.78	
Skaalvik & Hagtvet (1990)[i]	Norwegian	348	Not reported	.80	.78
		934		.81	
		796		.81	
Winston et al. (1997)	Black/White	1,275	13	.80	
Wylie (1989)	90% White	1,543	9-14	.80	

Note. Coeff. = coefficient. RSE = Rosenberg Self-Esteem Inventory; SDQ-II = Self-Description Questionnaire II; SDQ-III = Self-Description Questionnaire III; SEQ = Self-Esteem Questionnaire, Global Self-Worth subscale; SPPC = Self-Perception Profile for Children, Self-Worth subscale.

[1] Vietnamese American. [a]6 items. [b]10 items. [c]7 items. [d]Males first, females second. [e]Derived from RSE. [f]8 items. [g]5 items. [h]General Self subscale only. [i]Self-designed measure (13 items), based on seven items from SPP Self-Worth subscale.

Table 3

Inter-Item and Item-Total Correlations for the National Education Longitudinal Studies Data Set

Item	1	2	3	4	5	6	7	8
1 – RSE1	--	.25*	.23*	.40*	.21*	.26*	.24*	.44*
2 – RSE2	.41*	--	.31*	.24*	.12*	.19*	.20*	.34*
3 – RSE3	.33*	.44*	--	.27*	.09*	.12*	.16*	.30*
4 – RSE4	.59*	.44*	.36*	--	.16*	.19*	.25*	.40*
5 – RSE5 (reverse scored)	.34*	.22*	.20*	.33*	--	.55*	.25*	.41*
6 – RSE6 (reverse scored)	.37*	.27*	.23*	.36*	.65*	--	.33	.48*
7 – RSE7 (reverse scored)	.35*	.32*	.27*	.38*	.32*	.27	--	.40*
8 – RSE Total	.58*	.49*	.43*	.59*	.53*	.57*	.49*	--

Note. RSE = Rosenberg Self-Esteem Scale. RSE1 = "I feel good about myself;" RSE2 = "I feel I am a person of worth, the equal of other people;" RSE3 = "I am able to do things as well as most other people;" RSE4 = "On the whole, I am satisfied with myself;" RSE5 = "I certainly feel useless at times;" RSE6 = "At times I think I am no good at all;" RSE7 = "I feel I do not have much to be proud of." Correlations for Black Americans are above the diagonal (min. *N* = 1,320); those for White Americans are below the diagonal (min. *N* = 8,454).

* = Fisher's Z-test between Black and White individuals significant, $p<.01$.

Table 4

Meta-Analyses for Self-Esteem (SE) and Academic Achievement (AA) and Self-Concept (SC) and Academic Achievement

Correlation	*K*	*N*	Unweighted *r*	Weighted *r*	95% CI	*Q*	Fail-Safe *N*
SE ⟷ AA	81	58,358	.18	.17***	(.16/.18)	302.55***	190 studies
SE ⟷ AA[a]	80	44,985	.18	.18***	(.17/ .19)	262.39***	212 studies
SC ⟷ AA	94	14,026	.26	.24***	(.23/.26)	324.60***	365 studies

Note. *k* = number of samples in analysis; *N* = number of participants; CI = confidence interval for weighted mean effect size (*r*); *Q* = homogeneity test statistic.

[a] Without Kalanek (1997).

*$p \leq .05$. **$p \leq .01$. ***$p \leq .001$.

Table 5

Self-Esteem (SE) and Academic Achievement (AA) Relationship with Categorical Moderators

Level of moderator	Q_b	k	N	Weighted mean r	95% CI	Q_w
Ethnicity	30.43***					
Black		18	7,004	.14	(.11/.16)	61.27***
White		14	16,897	.20	(.18/.21)	49.87***
Mixed		20	20,709	.15	(.14/.16)	118.14***
Gender	34.59***					
Female		23	11,119	.20	(.18/.21)	45.37***
Male		27	12,681	.19	(.17/.21)	81.10***
Mixed		26	27,818	.14	(.13/.15)	130.31***
Grade	82.81***					
Elementary		7	497	.16	(.07/.25)	7.69***
Middle School		29	31,100	.15	(.14/.16)	84.26***
High School		19	21,910	.21	(.19/.22)	64.62***
College & Beyond		21	4,289	.09	(.06/.12)	48.14***
Ethnicity x Gender	3.44					
Black Females		4	2,226	.19	(.15/.23)	3.45***
Black Males		6	2,188	.17	(.13/.21)	14.86***
White Females		5	4,828	.22	(.19/.24)	10.72***
White Males		7	6,572	.19	(.17/.22)	36.79***
Ethnicity x Grade	46.87***					
Black Middle School		7	2,612	.16	(.12/.20)	11.51***
Black High School		6	2,595	.18	(.14/.21)	18.20***
Black College		4	1,779	.04	(-.01/.09)	7.43***
White Middle School		4	9,050	.18	(.16/.20)	14.43***
White High School		2	7,394	.21	(.19/.24)	13.08***
White College		6	331	.13	(.02/.24)	2.63***
Gender x Grade						
Female Elementary		4	165	.37	(.23/.50)	5.29***
Male Elementary		4	165	.28	(.13/.42)	9.07***
Female Middle School		11	7,840	.19	(.17/.21)	21.34***
Male Middle School		11	7,448	.14	(.12/.17)	12.16***

Level of moderator	Q_b	*k*	*N*	Weighted mean *r*	95% CI	Q_w
Female High School		4	2,751	.22	(.18/.26)	4.78***
Male High School		6	4,718	.26	(.24/.29)	8.70***
Female College		4	363	.10	(.05/.26)	2.41***
Male College		6	350	.16	(-.01/.20)	5.20***
Publication Status	21.91***					
Published		50	16,644	.20	(.18/.21)	182.85***
Unpublished		31	41,714	.16	(.15/.16)	99.40***
Socioeconomic Status	1.40					
Lower		11	1,598	.19	(.14/.23)	34.35***
Lower Middle		3	155	.26	(.10/.40)	1.88***
Middle		13	2,316	.18	(.14/.22)	25.97***
Upper Middle		4	1,442	.17	(.12/.22)	0.25***
SE Measure	85.96***					
RSE		43	40,507	.19	(.18/.20)	176.57***
SEQ		1	13,373	.12	(.10/.14)	NA
SPP		10	1,732	.13	(.09/.18)	5.60***
Teacher		4	338	.40	(.30/.49)	3.22***
Other		23	5,461	.14	(.11/.16)	53.71***
AA Measure	3.26					
Record GPA		29	6,019	.16	(.14/.19)	62.95***
Self-report GPA		30	42,521	.17	(.16/.18)	185.51***
Standardized		9	8,614	.18	(.16/.20)	39.61***
Other		12	983	.15	(.09/.21)	12.10***

Note. Q_b = between-group homogeneity; *k* = number of samples in analysis; *N* = number of participants; CI = confidence interval for weighted mean effect size (*r*); Q_w = within-group homogeneity. RSE = Rosenberg Self-Esteem Scale; SEQ = Self-Esteem Questionnaire; SPP = Harter's Self-Perception Profile, Global Self-Worth subscale. Teacher = teacher rating; Record = school records. GPA = grade point average; Standardized = standardized achievement test score.

[a] When Kalanek's (1997) results from a strong, multi-ethnic sample were removed from the analysis, Whites' *r* looked more like mixed samples results (see Table 4).

[b] Teacher ratings, primarily from Norwegian samples, were removed from grade analysis.

*$p \leq .05$. **$p \leq .01$. ***$p \leq .001$.

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Table 6

Pair-Wise Contrasts of Categorical Variables, Self-Esteem and Academic Achievement

Variable	*r*		*Difference of Z^2*
Ethnicity			
Black – White	.14	.20	20.16***
Black – Mixed	.14	.15	1.15
White – Mixed	.20	.15	22.43***
Ethnicity – without Kalanek (1997)			
Black – White	.14	.20	20.16***
Black – Mixed	.14	.21	18.67***
White – Mixed	.20	.21	0.36
Gender			
Male – Female	.19	.20	0.10
Male – Mixed	.19	.14	23.19***
Female – Mixed	.20	.14	21.71***
Grade			
Elementary – Middle School	.27	.15	10.74***
Elementary – High School	.27	.21	2.70*
Elementary – College	.27	.09	22.10***
Middle School – High School	.15	.21	44.25***
Middle School – College	.15	.09	15.38***
High School – College	.21	.09	53.62***
Grade – Without Teacher Reports			
Elementary – Middle School	.16	.15	0.03
Elementary – High School	.16	.21	1.15
Elementary – College	.16	.09	2.16
Middle School – High School	.15	.21	44.25***
Middle School – College	.15	.09	15.38***
High School – College	.21	.09	53.62***
Ethnicity x Grade			
Black Middle – White Middle	.16	.18	1.31
Black Middle – Black High	.16	18	0.45
Black Middle – White High	.16	.21	6.35*
Black Middle – Black College	.16	.04	15.06***
Black Middle – White Collete	.16	.13	0.18
White Middle – Black High	.19	.18	0.10

Variable	*r*		*Difference of Z^2*
White Middle – White High	.19	.21	4.16*
White Middle – Black College	.19	.04	31.19***
White Middle – White College	.19	.13	0.79
Black High – White High	.18	.21	2.90
Black High – Black College	.18	.04	20.08***
Black High – White College	.18	.13	0.55
White High – Black College	.21	.04	44.80***
White High – White College	.21	.13	2.08
Black College – White College	.04	.13	2.35
Ethnicity x Gender			
Black Female – Black Male	.19	.17	0.43
Black Female – White Female	.19	.22	0.98
Black Female – White Male	.19	.19	0.01
Black Male – White Female	.17	.22	3.07
Black Male – White Male	.17	.19	0.80
White Female – White Male	.22	.19	1.49
Grade x Gender			
Male Elementary – Female Elementary	.10	.30	2.10
Male Elementary – Male Middle	.10	.14	0.18
Male Elementary – Female Middle	.10	.19	0.71
Male Elementary – Male High	.10	.26	2.55
Male Elementary – Female High	.10	.22	1.35
Male Elementary – Male College	.10	.16	0.28
Male Elementary – Female College	.10	.10	0.00
Female Elementary – Male Middle	.30	.14	2.68
Female Elementary – Female Middle	.30	.19	1.45
Female Elementary – Male High	.30	.26	0.17
Female Elementary – Female High	.30	.22	0.72
Female Elementary – Male College	.30	.16	1.68
Female Elementary – Female College	.30	.10	3.46
Male Middle – Female Middle	.14	.19	7.38**
Male Middle – Male High	.14	.26	44.30***
Male Middle – Female High	.14	.22	12.43***
Male Middle – Male College	.14	.16	0.10
Male Middle – Female College	.14	.10	0.71
Female Middle – Male High	.19	.26	18.80***

Variable	*r*		*Difference of* Z^2
Female Middle – Female High	.19	.22	2.45
Female Middle – Male College	.19	.16	0.22
Female Middle – Female College	.19	.10	2.72
Male High – Female High	.26	.22	3.55
Male High – Male College	.26	.16	3.52
Male High – Female College	.26	.10	9.44**
Female High – Male College	.22	.16	1.11
Female High – Female College	.22	.10	4.84*
Male College – Female College	.16	.10	0.69
Self-Esteem Measure			
RSE – Teacher	.19	.40	16.88***
RSE – SPP	.19	.13	6.07*
RSE – Other	.19	.14	16.16***
RSE – SEQ	.19	.12	55.15***
Teacher – SPP	.40	.13	22.62***
Teacher – Other	.40	.14	25.28***
Teacher – SEQ	.40	.12	29.13***
SPP – Other	.13	.14	0.01
SPP – SEQ	.13	.12	0.26
Other - SEQ	.14	.12	0.96
Academic Achievement Measure			
Report GPA – Self GPA	.16	.17	0.12
Report GPA – Standard	.16	.18	2.01
Report GPA – Other	.16	.15	0.10
Self GPA – Standard	.17	.15	2.60
Self GPA – Other	.17	.15	0.24
Standard - Other	.18	.15	1.05
Socioeconomic Status			
Lower – Lower Middle	.19	.26	0.84
Lower – Middle	.19	.18	0.06
Lower – Upper Middle	.19	.17	0.31
Lower Middle – Middle	.26	.18	1.05
Lower Middle – Upper Middle	.26	.17	1.32
Middle – Upper Middle	.18	.17	0.14

Note. RSE = Rosenberg Self-Esteem Scale; SPP = Self Perception Profile, Global Self-Worth subscale; SEQ = Self-Esteem Questionnaire. GPA = grade point average; Teacher = teacher rating; Standard = standardized achievement tests.

*$p \leq .05$. **$p \leq .01$. ***$p \leq .001$.

Table 7

Self-Esteem and Academic Achievement Relationship with Continuous Moderators

Level of moderator	*k*	Model *R*	*b*	SE *b*	95% CI	*Z*
Age						
Total	81	.06	.001	.003	-.005/-.000	1.15
African Americans	18	.71	-.017	.004	-.022/-.011	-5.69***
Caucasian Americans	14	.09	-.002	.008	-.010/.005	-0.62
Data Collection Year						
Total	81	.37	-.003	.001	-.004/-.002	-4.83***
African Americans	14	.33	-.003	.002	-.005/-.001	-2.81**
Caucasian Americans	18	.39	-.002	.002	-.005/-.000	-2.18*

Note. Analyses conducted following procedures for weighted least squares linear regression. *k* = number of samples in analysis; *b* = unstandardized regression coefficient; SE *b* = standard error of *b*; CI = confidence interval for *b*; *Z* = significance test.

*$p \leq .05$. **$p \leq .01$. ***$p \leq .001$.

Table 8

High School Seniors' Correlations Between Grades and Self-Esteem, 1972-1992

Group	1972	1982	1992
Boys			
African-American	$.17_{a}$*** (320)	$.11_{a}$*** (982)	$-.04_{b}$ (890)
Native American	$.24_{a}$ (47)	$.06_{a}$ (88)	$.07_{a}$ (61)
Latino	$.32_{a}$*** (210)	$.20_{a}$*** (1311)	$.12_{b}$*** (776)
Asian/Pacific Islander	$.15_{a}$ (44)	$.16_{a}$ (132)	$.21_{a}$*** (369)
White	$.16_{a}$*** (4835)	$.18_{a}$*** (7766)	$.16_{a}$*** (6966)
Girls			
African-American	$.09_{a}$* (515)	$.17_{b}$*** (1275)	$.15_{ab}$*** (975)
Native American	$.18_{a}$ (43)	$.36_{a}$*** (77)	$.25_{a}$** (93)
Latina	$.15_{ab}$* (198)	$.15_{a}$** (1145)	$.25_{b}$*** (815)
Asian/Pacific Islander	$-.08_{a}$ (198)	$.16_{b}$ (121)	$.13_{b}$** (356)
White	$.20_{a}$*** (4947)	$.15_{b}$*** (8506)	$.20_{a}$*** (6614)

Note. Reproduced by permission of author from Osborne (in press). Samples included seniors from the National Longitudinal Study data set (1972), High School and Beyond data set (1982), and National Education Longitudinal Study data set (1992). All data available from the National Center for Educational Statistics (NCES, 2002). In all samples, weights scaled to maintain original sample size. Cell size included in parentheses. Correlations with different subscripts within rows differ at $p \le .05$. All correlations two-tailed.

*$p \le .05$. **$p \le .01$. ***$p \le .001$.

Table 9

Correlations Between Self-Esteem and Academic Achievement (Osborne, 1997)

	Self-esteem and achievement			Self-esteem and grades		
Group	BY	F1	F2	BY	F1	F2
Black boys	$.25_{a}$*** (901)	$.25_{a}$*** (797)	$.00_{b}$ (551)	$.23_{a}$*** (932)	$.07_{b}$* (774)	$-.02_{c}$ (531)
Black girls	$.16_{a}$*** (1,008)	$.15_{a}$*** (851)	$.12_{b}$** (602)	$.27_{a}$*** (1,007)	$.21_{b}$*** (829)	$.14_{c}$*** (581)
White boys	$.16_{a}$*** (5,732)	$.16_{a}$*** (5,239)	$.15_{a}$*** (4,065)	$.25_{a}$*** (5,755)	$.24_{a}$*** (5,193)	$.16_{b}$*** (4,176)
White girls	$.16_{a}$*** (5,553)	$.18_{b}$*** (5,152)	$.19_{b}$*** (3,818)	$.25_{a}$*** (5,621)	$.27_{a}$*** (5,176)	$.19_{b}$*** (3,975)
Latinos	$.19_{a}$*** (584)	$.24_{b}$*** (487)	$.16_{a}$*** (339)	$.25_{a}$*** (597)	$.22_{a,b}$*** (485)	$.16_{b}$** (351)
Latinas	$.20_{a}$*** (660)	$.19_{a}$*** (515)	$.22_{a}$*** (376)	$.22_{a}$*** (668)	$.27_{b}$*** (523)	$.26_{b}$*** (380)

Note. Reproduced with permission of the author. Numbers in parentheses reflect cell sizes. All correlations adjusted for base year socioeconomic status. Correlations with different subscripts within rows differ at $p < .01$. BY = Base year (8th grade); F1 = First year follow-up (10th grade); F2 = second follow-up (12th grade).

*$p \leq .05$. **$p \leq .01$. ***$p \leq .001$.

Table 10

Correlations Between Self-Esteem and Grade Point Average (Eccles, personal communication, April-August, 2002)

	Longitudinal			Quasi-longitudinal		
Group	7th Grade	8th Grade	11th Grade	7th Grade	8th Grade	11th Grade
Total	.09* (566)	.10*	.07	.010*** (1275)	.11*** (820)	.03 (908)
Black boys	.07 (176)	.10	.14	.16*** (435)	.10 (277)	.09 (264)
Black girls	.24*** (182)	.22**	.14	.16*** (402)	.27*** (262)	.10 (266)
White boys	.12 (98)	.20*	-.02	.20** (212)	.19* (131)	.04 (143)
White girls	.08 (110)	.17	.06	.07 (226)	.16* (150)	.01 (152)

Note. Reproduced with permission of the author from unpublished data. Numbers in parentheses reflect cell sizes. Grade point average gathered from records in 7th and 8th grade, self-report in 11th grade.

$*p \leq .05$. $**p \leq .01$. $***p \leq .001$.

Table 11

Selected Pair-Wise Contrasts of Data from Tables 9 and 10

Variable	*r*		*Difference of* Z^2
Osborne			
Black Males – Black Females	.00	.12	2.03*
(12th Grade, Achievement)	(551)	(602)	
Black Males – Black Females	.07	.21	2.86**
(10th Grade, Grades)	(774)	(829)	
Black Males – Black Females	-.02	.14	2.68**
(12th Grade, Grades)	(531)	(581)	
Eccles- Longitudinal			
Black Males – Black Females (7th)	.07	.24	1.64*
	(176)	(182)	
Black Males – Black Females (8th)	.10	.22	1.16
	(176)	(182)	
White Males – Black Females (11th)	-.02	.14	1.27
	(98)	(182)	
Eccles- Quasi-Longitudinal			
White Males – White Females (7th)	.20	.07	1.38
	(212)	(226)	
Black Males – Black Females (8th)	.10	.27	2.04*
	(277)	(262)	
White Females – Black Females (11th)	.01	.10	0.88
	(152)	(266)	

Note. Numbers in parentheses represent cell sizes.

Self-esteem and academic achievement

-.9	
-.8	
-.7	
-.6	
-.5	
-.4	
-.3	
-.2	6
-.1	5
-.0	4667
+.0	0235556777789999
+.1	0111122222344566667777789999
+.2	000111122344566889
+.3	36779
+.4	13569
+.5	11
+.6	0
+.7	
+.8	
+.9	

Number of samples: 81
Weighted mean effect size(*r*): .17

Self-concept and academic achievement

-.9	
-.8	
-.7	
-.6	
-.5	
-.4	
-.3	
-.2	
-.1	4
-.0	88
+.0	12356689
+.1	0112244445556678889999
+.2	0011111123466677888999
+.3	00111122223344556689
+.4	000112234447
+.5	22223
+.6	0
+.7	
+.8	7
+.9	

Number of samples: 94
Weighted mean effect size(*r*): .24

Figure 1. Stem-and-leaf plots of unweighted effect sizes included in the meta-analyses.

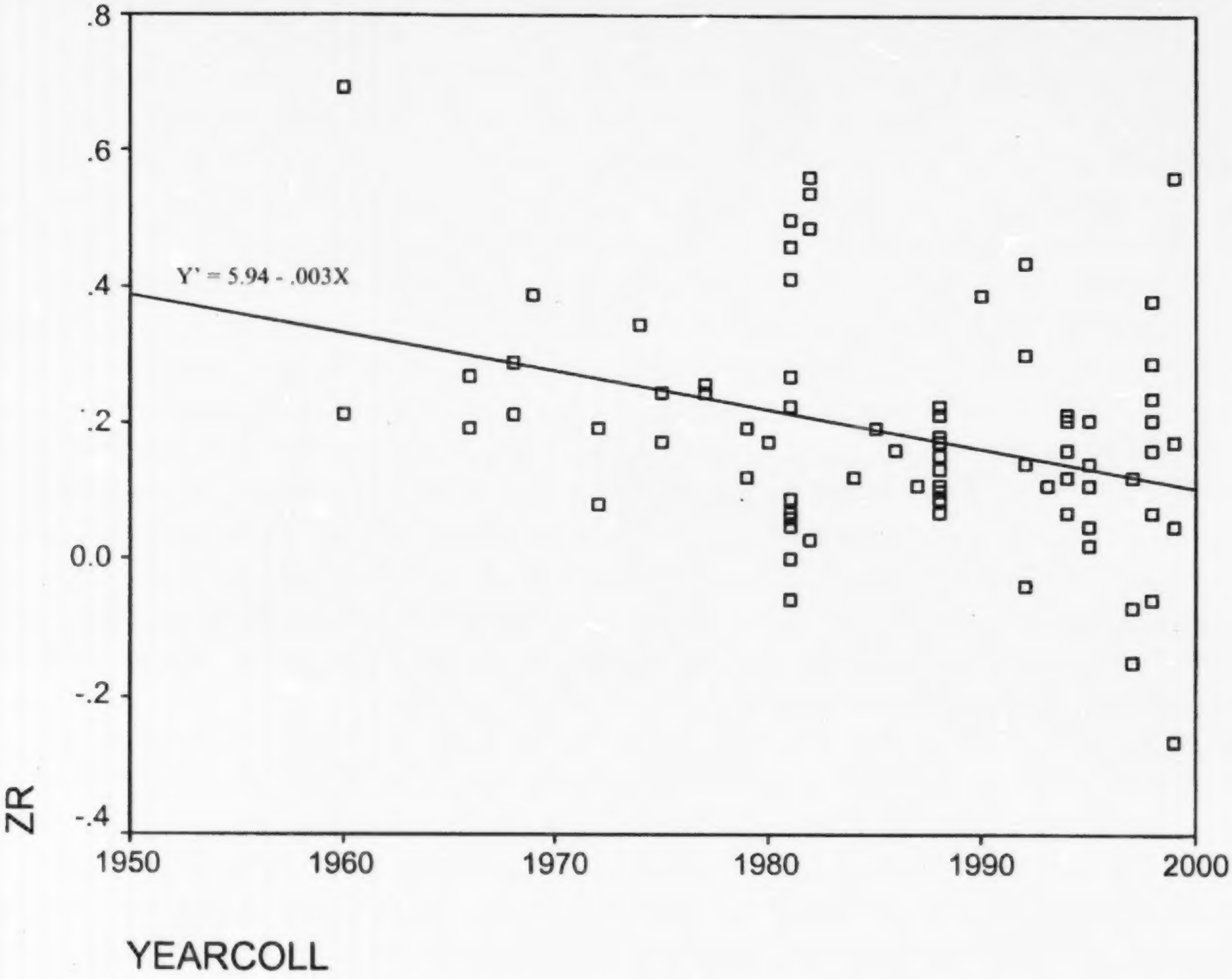

Figure 2. Prediction of standardized, unweighted effect sizes (Zr) from year of data collection (YEARCOLL). As graphic display of weighted effects is not possible, the figure above is an estimation. However, the regression equation is accurate for weighted least squares regression analysis, weighted by N-3.

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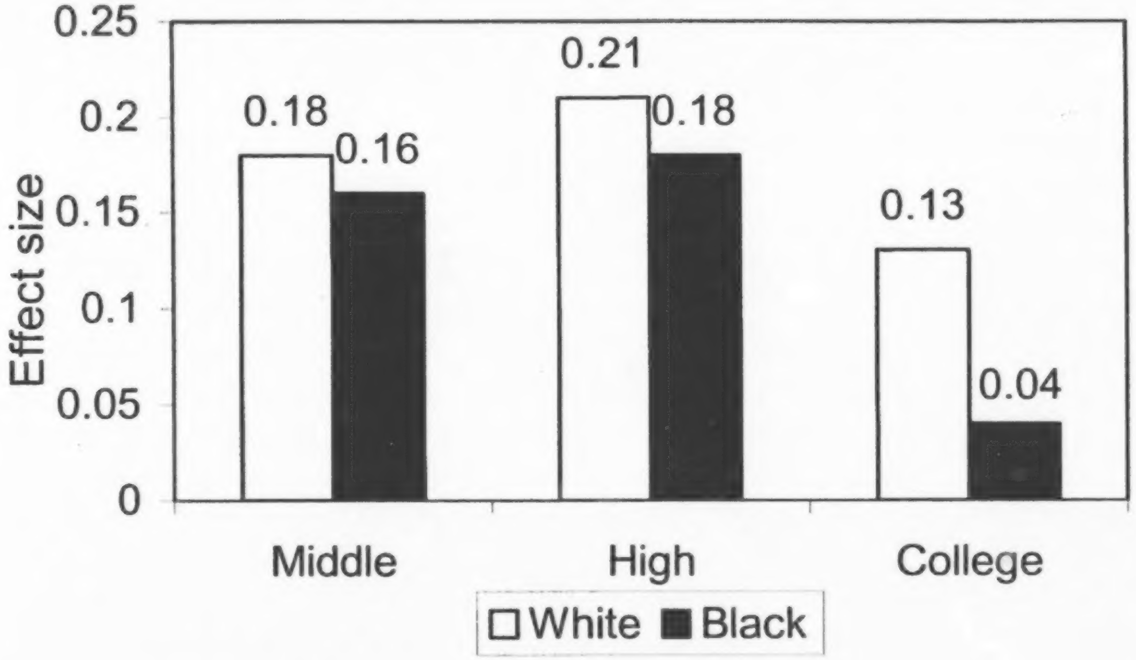

Figure 3. Relationship (*r*) between self-esteem and achievement by ethnic group. Middle = middle school; High = high school; College = college and beyond.

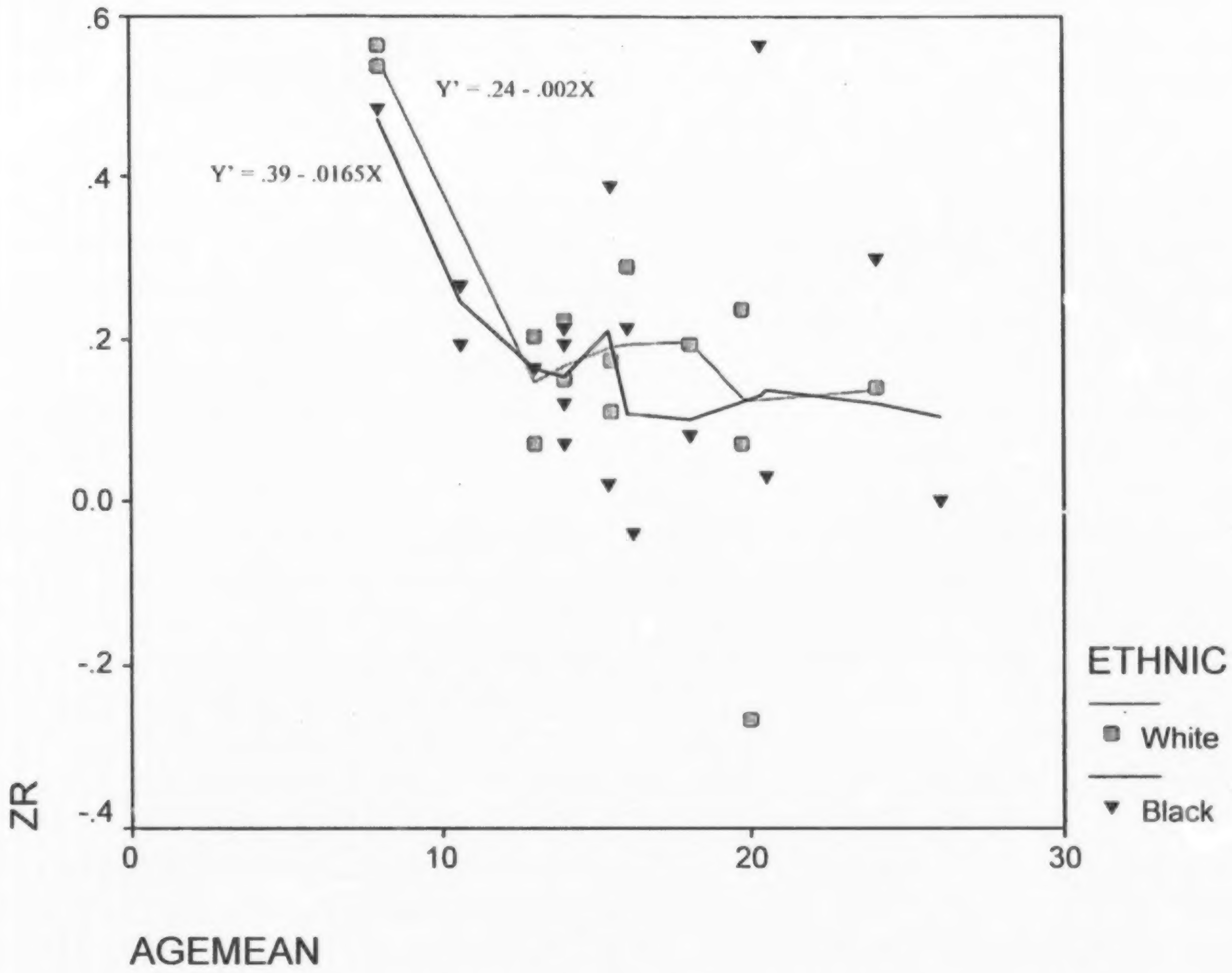

Figure 4. Ethnic differences prediction of standardized, unweighted effect sizes (Zr) from mean age of participants (AGEMEAN), fit with a Lowess curve. As graphic display of weighted effects is not possible, the figure above is an estimation. However, the regression equation is accurate for weighted least squares regression analysis, weighted by N-3.

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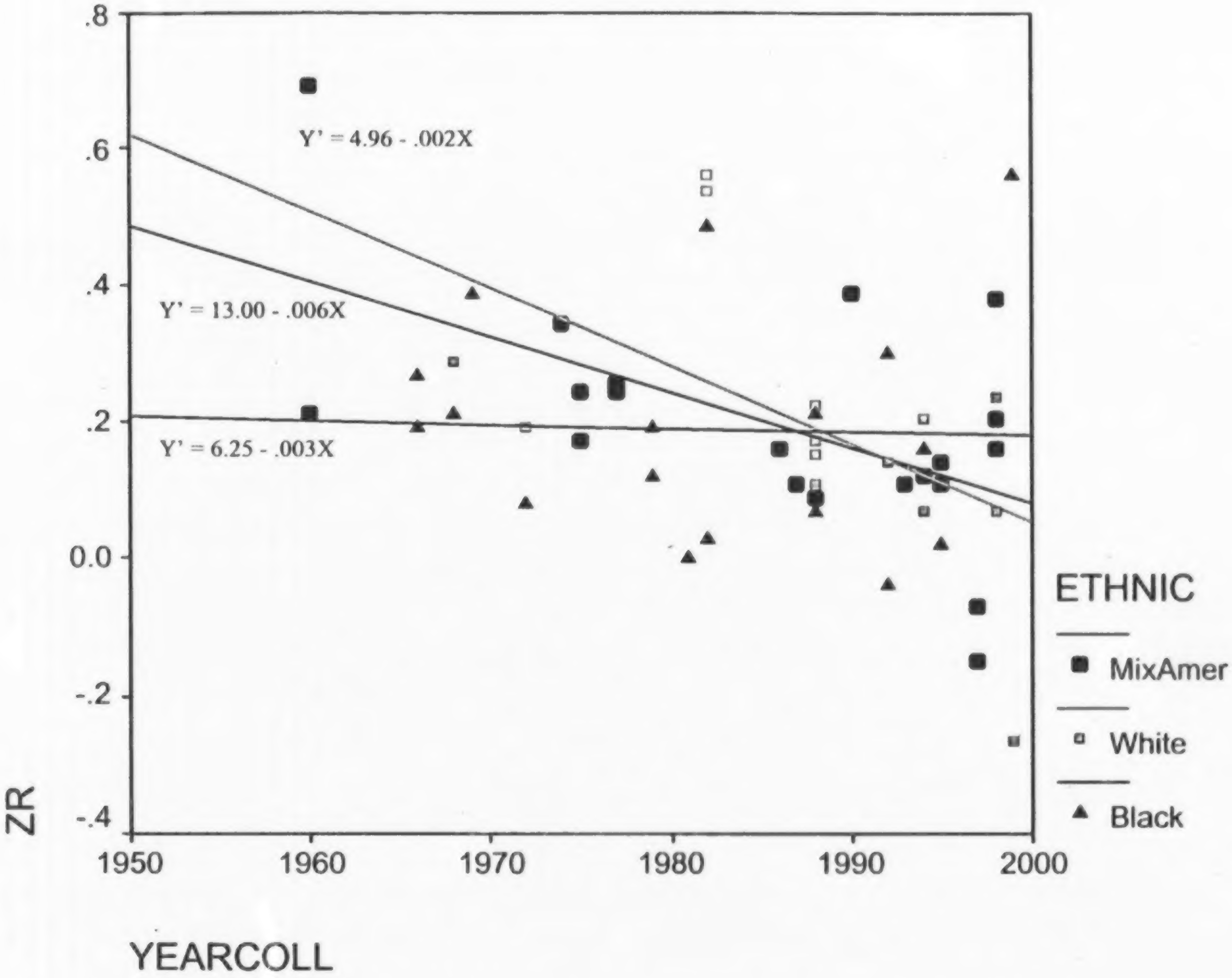

Figure 5. Prediction of standardized, unweighted effect sizes (Zr) from year of data collection (YEARCOLL), by ethnic group. As graphic display of weighted effects is not possible, the figure above is an estimation. However, the regression equation is accurate for weighted least squares regression analysis, weighted by N-3.

Appendix A - Meta-Analytic Method

The meta-analysis was performed using a fixed effects model. While various estimators for effect size exist, two are most commonly used. *D* is most appropriate when comparing strength and direction of the mean difference between two groups, while *r* estimates the magnitude and direction of the association between two relevant variables (Rosenthal, 1991). *R* was chosen for the current study, as the first goal of the meta-analysis was to determine the relationship between self-esteem and academic achievement and the second goal was to include ethnicity as a moderating variable. In this instance, a positive *r* value shows that greater self-esteem tends to be concurrent with better academic achievement.

While most studies already reported the effect size in terms of *r*, several samples were converted to *r* from *t*-values or one-sample *F*-values.

$$r = \sqrt{t^2 / (t^2 + df)} \tag{1}$$

$$r = \sqrt{F / (F + df_{within})} \tag{2}$$

Occasionally, *t* was not given, but could be computed from means and standard deviations, and *t* was then converted to *r*. When means and standard deviations were given for two or more groups, t was computed (and then transformed to r) using the following formula for linear contrasts (Rosenthal & Rosnow, 1985):

$$t = \frac{(M_1 - M_2) - 0}{SE_D} \tag{3}$$

where M_1 is the mean for the group 1, M_2 is the mean for group 2. self-esteem$_D$ stands for the standard error of the difference (Aron & Aron, 1999), which was calculated thus (Bliwise, 2000):

$$SE_D = \sqrt{\left(\frac{N_1 SD_1^2 + N_2 SD_2^2}{N_1 + N_2 - 2}\right)\left(\frac{1}{N_1} + \frac{1}{N_2}\right)} \tag{4}$$

where SD = Standard deviation and N = number of participants in a group.

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Nonindependence

An important assumption in meta-analysis is that of independence – that participants are not included in more than one sample (Cooper & Hedges, 1994; Rosenthal, 1995). To the authors' knowledge, participants used in the current analysis' samples did not overlap across studies. In cases where the same data set was described in more than one study, only one study/effect size was used. If more than one measure of self-esteem or academic achievement was reported in a study, only the first reported *r* was used.

Bias can also occur when effect sizes are derived from multiple studies by the same research team or from multiple samples in the same study. Typically, the concern regards methodology in that similar procedures may bias effect sizes. However, since the current review primarily investigated measures of self-report, this idea is less relevant than it would be for experimental manipulations. It was almost impossible, however, to avoid violating the nonindependence assumption in regards to using multiple groups from the same study. Most ethnic minority research in the self-esteem literature occurs only in comparison to or in conjunction with White samples, so it was often necessary to glean from studies or to request from authors effect sizes specific to minority samples. Ideally, in the future researchers will conduct studies solely with minority participants. Until this becomes regular practice, however, the a priori decision made here to include multiple samples from the same study was crucial for determining ethnic differences. Given the large number of studies and participants within studies, it did not seem that multiple effects from the same study were likely to bias results.

Combining Effect Sizes

Effect sizes, *r*, were first converted to Fisher *Z* scores to correct for skew before averaging them together (Cooper & Hedges, 1994; Rosenthal, 1991).

$$z_r = \frac{1}{2} \log_e \left[\frac{1+r}{1-r} \right] \tag{5}$$

Sample size was then used to weight each Z_r so that larger samples had more influence when compared to smaller samples. This was accomplished using the following:

$$z_r = \frac{\Sigma(N_j - 3) z_{r_j}}{\Sigma(N_j - 3)} \tag{6}$$

j = 1,...,k. k = total number of samples.

A Z-test was then conducted to determine the statistical significance of the average effect size:

$$Z = \overline{z_r} / \text{self-esteem}_{(Zr)}$$

(7)

$$SE_{(z_r)} = \sqrt{\frac{1}{\sum_{i=1}^{k} (n_i - 3)}} \tag{8}$$

Z was then transformed back to r. Cohen's (1992) guidelines for strength of effect sizes were adhered to, with an r of .10 indicating a small effect, an r of indicating a moderate effect, and an r of .50 indicating a large effect. To conclude effect size analysis, 95% confidence intervals were calculated for each weighted average effect and converted back to r:

$$z_r \pm 1.96 \sqrt{\frac{1}{\sum_{i=1}^{k} (n_i - 3)}} \tag{9}$$

Effect Size Tests of Homogeneity

The Q-statistic, a homogeneity estimate, indicates how much variation in effect sizes is present and whether it is greater than expected by chance alone (Cooper & Hedges, 1994). The Q statistic adheres to a chi square distribution and was estimated by the following formula:

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$$Q = \sum_{i=1}^{k} (N_i - 3)(z_{ri} - z_r)^2 \tag{10}$$

Significant Q-values warrant moderator variable searches. Even so, investigation of moderators should generally be based on theory (Rosenthal, 1995). Procedures for considering moderating variables follow below.

Examination of Moderator Variables

DSTAT was used to conduct tests of categorical variables, i.e., ethnicity, gender, grade, publication status, socioeconomic status, self-esteem measure, academic achievement measure, and interactions between any two of ethnicity, gender, and grade). SPSS was utilized for tests of continuous moderators, i.e., mean age and year of data collection. Categorical moderator analyses are similar to analysis of variance (ANOVA) but tested on the χ^2 distribution, where between group estimates (Q_b) and within group estimates (Q_w) are computed and evaluated for significance. A significant Q_b suggests variability across moderator levels greater than presumed by chance, while a significant Q_w indicates greater within-group heterogeneity than expected by chance alone. Q_b and Q_w were derived via the following (Cooper & Hedges, 1994):

$$TW = \sum_{i=1}^{j} (n_i - 3) \tag{11}$$

$$TWD = \sum_{i=1}^{j} (n_i - 3) z_{r_i} \tag{12}$$

$$TWDS = \sum_{i=1}^{j} (n_i - 3) z_{r_i}^{\;2} \tag{13}$$

$$Q_{Total} = TWDS - \frac{(TWD)^2}{TW} \tag{14}$$

$$Q_{wi} = TWDS_i - \frac{TWD_i^{\,2}}{TW_i} \tag{15}$$

$$Q_b = Q_T - Q_w \tag{16}$$

j = total # cases in sub-group.

Because Q_b is an omnibus statistic, pair-wise contrasts for moderators with greater than two levels were conducted. Full moderation, seen when Q_b is significant while Q_w is not, was not seen in the current review. In all cases, Q_w statistics were significant. Subsequently, results must be interpreted with a modicum of caution.

Cooper and Hedges' (1994) suggestion was followed to use weighted least squares (WLS) regression procedures for continuous moderator testing. Weighting was accomplished via the inverse of effect size variances (*n*-3), regressed upon the predictor variables. Then, a *Z*-test of the unstandardized regression coefficient (*b*) determined statistical significance (Formula 17), supplemented by 95% confidence intervals (Formula 18):

$$Z_j = \frac{b_j}{S_j} \tag{17}$$

$$S_j = \frac{SE_j}{\sqrt{MS_{error}}} \tag{18}$$

$$b_j \pm 1.96(S_j) \tag{19}$$

j = 1, …, k; k = total # of predictors in equation.

Appendix B – Meta-Analytic Findings for Self-Concept

Procedures for meta-analysis followed those described in Appendix A

Table 1

Studies in Secondary Meta-Analysis: Self-Concept (SC) and Academic Achievement (AA)

				Age		Data Collection		SC			
Authors	Ethnicity	*N*	Sex	mean	Education	Year	SES	Measure	AA Measure	Publication	*r*
Alves-Martins, Peixoto, Gouveia-Pereira, Amaral & Pedro (2002)	Portugese	838	Mixed	14	7-9	2000	NR	SPP	Being held back a grade (low) or not (high)	Published	.08
Baker, Beer, & Beer (1991)	NR	28	Mixed	17.6	10-12	1989	NR	CSEI^a	Grades (records)	Published	.31
Bledsoe (1967)	NR	60	Female	10	4	1965	NR	Adject. Checklist	Standardized (composite)	Published	.19
Bledsoe (1967)	NR	65	Male	10	4	1965	NR	Adject. Checklist	Standardized (composite)	Published	.43
Bledsoe (1967)	NR	70	Female	12	6	1965	NR	Adject. Checklist	Standardized (composite)	Published	.06
Bledsoe (1967)	NR	76	Male	12	6	1965	NR	Adject. Checklist	Standardized (composite)	Published	.39
Bowles (1999)	Australian	177	Mixed	14.4	7,9,11	1997	Mixed	CSEI^a	Grades (records)	Published	.29
Bridgeman & Shipman (1978)	African American	67	Female	9	3	1975	Mixed	CSEI^b	Standardized (reading)	Published	.42
Bridgeman & Shipman (1978)	African American	75	Male	9	3	1975	Mixed	CSEI^b	Standardized (reading)	Published	.31
Bridgeman & Shipman (1978)	African American	63	Female	9	3	1975	Mixed	CSEI^b	Standardized (reading)	Published	.40

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				Age		Data Collection		SC			
Authors	Ethnicity	*N*	Sex	mean	Education	Year	SES	Measure	AA Measure	Publication	*r*
Bridgeman & Shipman (1978)	African American	72	Male	9	3	1975	Mixed	CSEI[b]	Standardized (reading)	Published	.44
Bridgeman & Shipman (1978)	Caucasian American	22	Female	9	3	1975	Mixed	CSEI[b]	Standardized (reading)	Published	.17
Bridgeman & Shipman (1978)	Caucasian American	30	Male	9	3	1975	Mixed	CSEI[b]	Standardized (reading)	Published	.09
Brubeck & Beer (1992)	Caucasian American	131	Mixed	16.5	9-12	1990	NR	CSEI[c]	Grades (records)	Published	.28
Bruck & Bodwin (1962)	NR	60	Mixed	--	3,6,11	1960	NR	Draw-a-Person	Standardized (composite)	Published	.60
Caplin (1968)	Mixed	180	Mixed	13	6-8	1966	Mixed	Adject. Checklist	Standardized (composite)	Published	.52
Coopersmith (1959)	NR	102	Mixed	11	5-6	1957	Upper Middle	CSEI	Standardized (composite)	Published	.36
Demo & Parker (1987)	African American	149	Mixed	20.5	College	1981	Lower Middle	TSCS	Grades (records)	Published	-.08
Demo & Parker (1987)	Caucasian American	149	Mixed	20.5	College	1981	Lower Middle	TSCS	Grades (records)	Published	.11
Diesterhaft & Gerken (1983)	NR	78	Female	13	7	1981	NR	PH	Standardized (reading)	Published	.26
Diesterhaft & Gerken (1983)	NR	76	Male	13	7	1981	NR	PH	Standardized (reading)	Published	.03

				Age		Data Collection		SC			
Authors	Ethnicity	*N*	Sex	mean	Education	Year	SES	Measure	AA Measure	Publication	*r*
Fiedler, Dodge, Jones, & Hutchins (1958)	NR	87	Male	20.5	College	1956	NR	Adject. Checklist	Grades (records)	Published	-.14
Fiedler, Dodge, Jones, & Hutchins (1958)	NR	71	Male	20.5	College	1956	NR	Adject. Checklist	Grades (records)	Published	.28
Flynn (1991)	African American	120	Mixed	4	Preschool	1989	Middle	Brown Self-Concept Referents Test	Cooperative Preschool Inventory	Published	.30
Gaspard & Burnett (1991)	NR	66	NR	14.6	9	1988	Lower Middle	CSEI[a]	Grades (records)	Published	.10
Ginter & Dwinell (1994)	NR	72	Mixed	20.5	College	1992	NR	CSEI[c]	Grades (records)	Published	.06
Gray-Little & Appelbaum (1979)	Mixed	366	Mixed	13.7	7,10	1977	Mixed	CSEI[a]	Standardized (composite)	Published	.26
Green, Miller, & Gerard (1975)	NR	1422	NR	11	4-6	1966	Mixed	Adject. Checklist	Standardized (not specific)	Published	.15
Hart (1985)	English	128	Mixed	11	NR	1983	NR	LSEQ	Standardized (math)	Published	.18
Howerton, Enger, & Cobbs (1994)	African American	42	Male	13.3	6-8	1992	Lower	CSEI	Standardized (composite)	Published	.29
Keltikangas-Jaervinen (1992)	Finnish	643	Female	13.4	NR	1987	NR	CSEI[a]	Grades (self-report)	Published	.24

				Age		Data Collection		SC			
Authors	Ethnicity	*N*	Sex	mean	Education	Year	SES	Measure	AA Measure	Publication	*r*
Keltikangas-Jaervinen (1992)	Finnish	610	Male	13.4	NR	1987	NR	CSEI[a]	Grades (self-report)	Published	.27
Khalid (1990)	Pakistani-Scottish	40	Female	10.5	4-5	1988	Middle	PH	Teacher Rating	Published	.44
Khalid (1990)	Pakistani-Scottish	40	Male	10.5	4-5	1988	Middle	PH	Teacher Rating	Published	.40
Khalid (1990)	Scottish	40	Female	10.5	4-5	1988	Middle	PH	Teacher Rating	Published	.52
Khalid (1990)	Scottish	40	Male	10.5	4-5	1988	Middle	PH	Teacher Rating	Published	.53
Kifer (1975)	NR	47	Female	11	5	1973	NR	CSEI[d]	Grades (records)	Published	.29
Kifer (1975)	NR	50	Male	11	5	1973	NR	CSEI[d]	Grades (records)	Published	.40
Kifer (1975)	NR	58	Female	13	7	1973	NR	CSEI[d]	Grades (records)	Published	.34
Kifer (1975)	NR	51	Male	13	7	1973	NR	CSEI[d]	Grades (records)	Published	.35
Kugle, Clements, & Powell (1983)	Mixed	87	Mixed	8	2	1981	NR	PH	Standardized (reading)	Published	.18
Kunce, Getsinger, & Miller (1972)	NR	247	Mixed	14.6	9	1970	Mixed	CSEI[e]	Grades (records)	Published	.20
Leonardson (1986)	Caucasian American	165	Mixed	16.6	9-12	1984	NR	PH	Grades (records)	Published	.47

Authors	Ethnicity	*N*	Sex	Age mean	Education	Data Collection Year	SES	SC Measure	AA Measure	Publication	*r*
Lewis & Adank (1975)	NR	89	NR	11	4-6	1973	NR	CSEI[a]	Standardized (composite)	Published	.30
Lewis & Adank (1975)	NR	130	NR	11	4-6	1973	NR	CSEI[a]	Standardized (composite)	Published	.42
Litza (1995)	Mixed	40	Mixed	24.3	College	1992	Lower	TSCS	Grades (records)	Unpublished	.52
Litza (1995)	Caucasian American	32	Mixed	24.3	College	1992	Middle	TSCS	Grades (records)	Unpublished	.87
Marcus-Newhall & Heindl (1998)	Mixed	507	Mixed	11.1	4-6	1996	NR	CSEI[c]	Grades (self-report)	Published	.19
Mboya (1984)	African American	74	Female	16	10	1982	NR	CSEI[a]	Standardized (composite)	Published	.16
Mboya (1984)	African American	137	Male	16	10	1982	NR	CSEI[a]	Standardized (composite)	Published	.15
Mboya (1984)	Caucasian American	59	Female	16	10	1982	NR	CSEI[a]	Standardized (composite)	Published	.21
Mboya (1984)	Caucasian American	170	Male	16	10	1982	NR	CSEI[a]	Standardized (composite)	Published	.21
Mboya (1999)	African	274	Mixed	16	8-12	1997	NR	SDI	Standardized (history)	Published	.14
McCormick & Karbinus (1976)	African American	43	NR	10	4	1972	Lower	CSEI[a]	Standardized (reading)	Published	.05
McCormick & Karbinus (1976)	Caucasian American	47	NR	10	4	1972	Lower Middle	CSEI[a]	Standardized (reading)	Published	.21

				Age		Data Collection		SC			
Authors	Ethnicity	*N*	Sex	mean	Education	Year	SES	Measure	AA Measure	Publication	*r*
McCormick & Karbinus (1976)	Latino/a	197	NR	10	4	1972	Lower	CSEI^a	Standardized (reading)	Published	.32
McCormick & Karbinus (1976)	African American	47	NR	11	5	1972	Lower	CSEI^a	Standardized (reading)	Published	.22
McCormick & Karbinus (1976)	Caucasian American	38	NR	11	5	1972	Lower Middle	CSEI^a	Standardized (reading)	Published	.23
McCormick & Karbinus (1976)	Latino/a	177	NR	11	5	1972	Lower	CSEI^a	Standardized (reading)	Published	.14
McCormick & Karbinus (1976)	African American	34	NR	12	6	1972	Lower	CSEI^a	Standardized (reading)	Published	.11
McCormick & Karbinus (1976)	Caucasian American	46	NR	12	6	1972	Lower Middle	CSEI^a	Standardized (reading)	Published	.28
McCormick & Karbinus (1976)	Latino/a	207	NR	12	6	1972	Lower	CSEI^a	Standardized (reading)	Published	.35
Midgett, Ryan, Adams, & Corville-Smith (2002)	Canadian	164	Mixed	10	4	2000	Middle	CSEI^a	Grades (records)	Published	.34
Midgett, Ryan, Adams, & Corville-Smith (2002)	Canadian	152	Mixed	13	7	2000	Middle	CSEI^a	Grades (records)	Published	.36
Mintz & Muller (1977)	"Spanish surname"	107	Mixed	10	4	1975	NR	PSCI	Standardized (composite)	Published	.26
Mintz & Muller (1977)	"Non-Spanish surname"	58	Mixed	10	4	1975	NR	PSCI	Standardized (composite)	Published	.12

				Age		Data Collection		SC			
Authors	Ethnicity	*N*	Sex	mean	Education	Year	SES	Measure	AA Measure	Publication	*r*
Mintz & Muller (1977)	"Spanish surname"	88	Mixed	12	6	1975	NR	PSCI	Standardized (composite)	Published	.10
Mintz & Muller (1977)	"Non-Spanish surname"	61	Mixed	12	6	1975	NR	PSCI	Standardized (composite)	Published	.21
Nieves (2000)	Mixed	95	Mixed	20.5	College	1997	Mixed	CSEI[f]	Grades (records)	Unpublished	-.08
Nieves (2000)	Mixed	77	Mixed	20.5	College	1997	Mixed	CSEI[f]	Grades (records)	Unpublished	.14
Ozehowsky & Clark (1970)	NR	521	Female	6	Kinder-garten	1968	NR	Clinical Ratings	Standardized (composite)	Published	.38
Ozehowsky & Clark (1970)	NR	521	Male	6	Kinder-garten	1968	NR	Clinical Ratings	Standardized (composite)	Published	.52
Piers & Harris (1964)	NR	119	Mixed	9	3	1962	Mixed	PH	Standardized (not specific)	Published	.19
Piers & Harris (1964)	NR	127	Mixed	12	6	1962	Mixed	PH	Standardized (not specific)	Published	.32
Primavera et al. (1974)	NR	103	Female	11.1	5-6	1972	Middle	CSEI[a]	Standardized (word meaning)	Published	.27
Primavera et al. (1974)	NR	77	Male	11.1	5-6	1972	Middle	CSEI[a]	Standardized (word meaning)	Published	.21
Quatman, Sampson, Robinson & Watson (2001)	Mixed	380	Mixed	16	8,10,12	1999	Middle	Other[g]	Grades (records)	Published	.18

Authors	Ethnicity	*N*	Sex	Age mean	Education	Data Collection Year	SES	SC Measure	AA Measure	Publication	*r*
Robison-Awana et al. (1986)	NR	69	Female	13	7	1984	NR	CSEI[c]	Standardized (composite)	Published	.44
Robison-Awana et al. (1986)	NR	71	Male	13	7	1984	NR	CSEI[c]	Standardized (composite)	Published	.20
Rogers, Smith, & Coleman (1978)	Mixed	159	Mixed	9.5	NR	1976	Lower Middle	PH	Standardized (composite)	Published	.02
Rosario (1999)	Latino/a	83	Mixed	13.3	8	1997	Lower	SEI	Standardized (reading)	Unpublished	.14
Rotheram (1987)	Mixed	241	Mixed	11.5	3-6	1985	Lower Middle	CSEI[h]	Grades (records)	Published	.15
Rubin (1978)	Mixed	82	Female	9	3	1975	Mixed	CSEI[a]	Standardized (reading)	Published	.32
Rubin (1978)	Mixed	109	Male	9	3	1975	Mixed	CSEI[a]	Standardized (reading)	Published	.12
Rubin (1978)	Mixed	83	Female	15	9	1975	Mixed	CSEI[a]	Standardized (reading)	Published	.41
Rubin (1978)	Mixed	106	Male	15	9	1975	Mixed	CSEI[a]	Standardized (reading)	Published	.41
Simon & Simon (1975)	NR	87	Mixed	11	5	1973	NR	CSEI[a]	Standardized (composite)	Published	.33
Utley (1986)	NR	282	Mixed	15	9	1983	NR	CSEI	Standardized (reading vocabulary)	Unpublished	.19

				Age		Data Collection		SC			
Authors	Ethnicity	*N*	Sex	mean	Education	Year	SES	Measure	AA Measure	Publication	*r*
Williams & Cole (1968)	NR	80	NR	12	6	1966	NR	TSCS	Standardized (reading)	Published	.31
Wills (1997)	NR	44	NR	20.5	College	1994	Lower Middle	CSEI[f]	Grades (records)	Unpublished	.01
Wong & Watkins (2001)	Hong Kong Chinese	280	Mixed	14.5	High School	1999	Lower Middle	CASES	Self-rated performance	Published	.21
Wright & Parker (1978)	Australian Non-Aboriginal	58	Mixed	13.4	8	1975	NR	CSEI[c]	Grades (records)	Published	.33

Note. AA = academic achievement; SC = Self-concept; SES = socioeconomic status. NR = not reported. Adject. = adjective; CASES = Chinese Adolescent Self-Esteem Scale; CSEI = Coopermith's Self-Esteem Inventory; LSEQ = Lawrence Self-Esteem Questionnaire; PH = Piers-Harris Children's Self-Concept Scale; PSCI = Primary Self-Concept Inventory; SDI = Self Desctiption Inventory; SEI = Self-Esteem Index; SPP = Harter's Self-Perception Profile, combined total; Standardized = standardized achievement test; TSCS = Tennessee Self-Concept Scale.

[a]School form (50 items). [b]42 items. [c]Short form (25 items). [d]40 items. [e]15 items. [f]Adult form (25 items). [g]CSEI, Short or Adult form (25 items) plus Self-Esteem Index (80 items). [h]53 items.

Table 2

Self-Concept (SC) and Academic Achievement (AA) Relationship with Categorical Moderators

Level of moderator	Q_b	*k*	*N*	Weighted mean *r*	95% CI	Q_w
Ethnicity	3.48					
Black		12	923	.18	(.12/.25)	38.71***
White		11	1,339	.26	(.21/.30)	60.42***
Mixed		49	7,718	.24	(.22/.26)	249.45***
Gender	29.17***					
Female		19	2,246	.29	(.25/.33)	47.00***
Male		22	2,636	.30	(.27/.34)	110.20***
Mixed		38	6,477	.20	(.18/.22)	195.13***
Grade	29.32***					
Elementary		51	7,062	.25	(.23/.28)	198.67***
Middle School		12	1,690	.18	(.13/.23)	59.61***
High School		15	2,279	.23	(.19/.27)	41.49***
College & Beyond		10	816	.07	(.00/.14)	72.11***
Ethnicity x Gender	2.6					
Black Females		3	204	.30	(.16/.42)	7.21***
Black Males		4	326	.25	(.14/.35)	9.30***
White Females		2	81	.14	(-.09/.35)	1.68***
White Males		2	200	.17	(.03/.30)	2.21***
Ethnicity x Grade	17.64***					
Black Elementary		7	401	.28	(.19/.37)	17.13***
White Elementary		5	633	.21	(.14/.29)	6.76***
Black Middle & Up		4	402	.05	(-.04/.15)	8.17***
White Middle & Up		6	706	.30	(.23/.37)	51.00***
Gender x Grade	91.29***					
Female Elementary		12	1,181	.34	(.29/.39)	24.29***
Male Elementary		12	1,210	.39	(.34/.44)	53.22***
Female Middle		3	206	.18	(.05/.31)	5.69***
Male Middle		4	245	.05	(-.01/.10)	19.90***
Female High School		3	216	.24	(.11/.37)	6.67***
Male High School		3	413	.23	(.13/.32)	8.26***

Level of moderator	Q_b	K	N	Weighted mean r	95% cultural inversion	Q_w
Publication Status	1.89					
Published		87	13,373	.23	(.22/.25)	363.28***
Unpublished		7	653	.18	(.10/.25)	57.13***
Socioeconomic Status	20.93***					
Lower Middle		10	1,669	.14	(.09/.19)	26.01***
Middle		13	1,315	.30	(.25/.35)	58.73***
SC Measure	1.85					
CSEI		56	7,048	.24	(.21/.26)	127.20***
PH		11	968	.25	(.19/.31)	46.58***
TSCS		5	450	.19	(.09/.27)	59.42***
Other		22	5,560	.22	(.20/.25)	187.24***
AA Measure	12.39**					
Record GPA		26	2,873	.20	(.17/.24)	132.96***
Self-report GPA		3	1,760	.23	(.19/.28)	5.26***
Standardized		58	7,995	.25	(.23/.27)	239.40***
Other		7	1,398	.16	(.11/.21)	32.30***

Note. Qb = between-group homogeneity test statistic; k = number of samples in analysis; N = number of participants; CI = Confidence interval for weighted mean effect size (r); Q_w = within-group homogeneity test statistic. Middle = middle school. CSEI = Coopersmith Self-Esteem Scale; PH = Piers-Harris Children's Self-Concept Scale; TSCS = Tennessee Self-Concept Scale. Record = school records; GPA = grade point average; Standardized = standardized achievement test score. *$p \leq .05$. **$p \leq .01$. ***$p \leq .001$.

Table 3

Self-Concept and Academic Achievement Relationship with Continuous Moderators

Level of moderator	*k*	Model *R*	*b*	SE *b*	95% CI	*Z*
Age						
Total	94	.35	-.016	.004	-.021/-.012	-6.96***
Blacks	12	.80	-.027	.007	-.041/-.013	-3.86***
Whites	11	.35	.018	.016	.004/.033	2.43*
Data Collection Year						
Total	94	.25	-.003	.001	-.004/-.002	-6.00***
Blacks	12	.13	-.004	.010	-.016/.008	-0.64
Whites	11	.41	.012	.009	.004/.020	2.86*

Note. Analyses were conducted following procedures for weighted least squares linear regression. *k* = number of samples in analysis; *b* = unstandardized regression coefficient; SE *b* = standard error of *b*; CI = confidence interval for *b*; *Z* = significance test.

$^*p \leq .05$. $^{**}p \leq .01$. $^{***}p \leq .001$.

Table 4

Pair-Wise Contrasts of Categorical Variables, Self-Concept and Academic Achievement

Variable	*r*		*Difference of Z'*
Ethnicity			
Black – White	.18	.26	3.26
Black – Mixed	.18	.24	2.67
White – Mixed	.26	.24	0.46
Gender			
Male – Female	.30	.29	0.15
Male – Mixed	.30	.20	21.55***
Female – Mixed	.29	.20	15.34***
Grade			
Elementary – Middle School	.25	.18	7.81**
Elementary – High School	.25	.23	1.37
Elementary – College	.25	.07	24.84***
Middle School – High School	.18	.23	2.19
Middle School – College	.18	.07	6.58**
High School – College	.23	.07	14.72***
Ethnicity x Grade			
Black Elementary – White Elementary	.28	.21	1.23
Black Elementary – Black Middle & Up	.28	.05	10.66***
Black Elementary – White Middle & Up	.28	.30	0.08
White Elementary – Black Middle & Up	.21	.05	6.37*
White Elementary – White Middle & Up	.21	.30	2.65
Black Middle & Up – White Middle & Up	.05	.30	15.98***
Ethnicity x Gender			
Black Female – Black Male	.30	.25	0.34
Black Female – White Female	.30	.14	1.52
Black Female – White Male	.30	.17	1.80
Black Male – White Female	.25	.14	0.80
Black Male – White Male	.25	.17	0.82
White Female – White Male	.14	.17	0.05
Grade x Gender			
Female Elementary – Male Elementary	.34	.39	1.53
Female Elementary – Female Middle	.34	.18	5.05*
Female Elementary – Male Middle	.34	.05	55.91***

Variable	*r*		*Difference of Z*
Female Elementary – Female High	.34	.24	2.08
Female Elementary – Male High	.34	.23	4.41*
Male Elementary – Female Middle	.39	.18	8.52**
Male Elementary – Male Middle3.26	.39	.05	76.76***
Male Elementary – Female High	.39	.24	4.52*
Male Elementary – Male High	.39	.23	9.42**
Female Middle – Male Middle	.18	.05	3.26
Female Middle – Female High	.18	.24	0.42
Female Middle – Male High	.18	.23	0.30
Male Middle – Female High	.05	.24	7.27**
Male Middle – Male High	.05	.23	10.43**
Female High – Male High	.24	.23	0.04
Self-Concept Measure			
CSEI – PHSCS	.23	.25	0.25
CSEI – TSCS	.23	.18	1.16
CSEI – Other	.23	.22	0.36
PHSCS – TSCS	.25	.18	1.49
PHSCS – Other	.25	.22	0.65
TSCS – Other	.18	.22	0.72
Academic Achievement Measure			
Report GPA – Self GPA	.20	.23	0.92
Report GPA – Standard	.20	.25	4.73*
Report GPA – Other	.20	.16	1.78
Self GPA – Standard	.23	.25	0.50
Self GPA – Other	.23	.16	4.12*
Standard - Other	.25	.16	9.87**

Note. CSEI = Coopersmith Self-Esteem Scale; PHSCS = Piers-Harris Children's Self-Concept Scale; TSCS = Tennessee Self-Concept Scale. GPA = grade point average; Standard = standardized achievement tests.

*$p \leq .05$. **$p \leq .01$. ***$p \leq .001$.

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Signature: Virginia B Wickline

Printed Name/Position/Title: Virginia B. WICKLINE, M.A.

Organization/Address: EMORY UNIVERSITY DEPT. OF PSYCHOLOGY
532 KILGO CIRCLE, ATLANTA, GA 30322

Telephone: 404-727-7451

FAX: 404-727-0372

E-Mail Address: vwickli@emory.edu

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